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ILLUSTRATIONS.

Monument to the Rev. Lord John Thynne, Westminster Abbey.—Mr. H. H. Armstead, R.A., Sculptor; Mr. J. L. Pearson, R.A., Architect ... 726
The Lady Chapel, Treves Cathedral ... 727
Proposed New Admiralty and War Offices: Design submitted in First Competition, by Mr. A. Waterhouse, A.R.A. ... 730-731
Ground and First Floor Plans of Mr. Waterhouse's Design for Proposed New Admiralty and War Offices ... 734, 735
Thurlow Towers, Streatham.—Messrs. Batterbury & Huxley, Architects ... 738-739

CONTENTS.

The Westminster Hall Question ... 715
Railway Rates: A New Phase ... 717
Notes ... 717
Provincial Architects and the Institute ... 719
Health Exhibition Handbook on Water Supply ... 721
Mr. G. Aitchison, A.R.A., on the Prospects of Architecture ... 721
British Archæological Association ... 724
Monument in Westminster Abbey to the late Rev. Lord John Thynne ... 724
The Lady Chapel, Treves Cathedral ... 724
Design for War and Admiralty Offices, by Mr. Waterhouse, A.R.A. ... 724
Thurlow Towers, Streatham ... 742
The Tower of London and Westminster Hall ... 742
A Syndicate of Taste ... 742
"Arab Art" ... 743
"Smell from Kitcheners" ... 743
Walling ... 743
Birmingham Art-Gallery ... 743
Bombay Municipal Buildings ... 743
Cape Town Drainage Competition ... 743
Competitions ... 743
Her Majesty's Theatre, Haymarket ... 743
Wooden Buildings: Knightley *v.* Smith ... 743
Ownership of Plans: Gooding *v.* Ealing Local Board ... 743
The Student's Column: Iron Roofs.—I. ... 744
Recent Patents ... 745
Recent Sales of Property ... 745
Meetings ... 746
Miscellanea ... 746

The Westminster Hall Question.

THE committee for considering the treatment of the west side of Westminster Hall has now held two sittings, on Tuesday last, and on the Wednesday of the week previous; and as persons not members of the committee were admitted to the committee-room to hear the proceedings, we presume that they may be regarded as open to public comment. The names of the members appointed to serve on the committee we gave in a note (p. 650, *ante*), with some indication of the surprise which we imagine most people conversant with architecture must have felt at the list, which includes only two persons out of a total of twelve, who are generally known to have any acquaintance with the class of subject to be dealt with; namely, Mr. Peddie, the well-known architect, and Mr. Beresford-Hope. Both in the selection of the committee and in the general tenour of the proceedings there seems evident not so much a desire to examine the whole subject dispassionately, as a wish to carry a scheme which the outgoing First Commissioner of Works has taken under his special protection. For this reason we attach much importance to the part taken in the examination by Mr. Peddie, who is really the only member of the committee possessing both theoretical and practical knowledge of architecture; and who, it must be remembered, has during his long professional career held a place and estimation north of the Tweed quite equal to that which Mr. Pearson so deservedly holds in this part of the kingdom. It is desirable to call attention to this, inasmuch as the *Times* report of the first committee meeting omitted all but the barest reference to his name, and gave not the slightest idea of the part he took in the examination, or of the very significant admissions which he elicited.

We have before devoted some space to describing the propositions of Mr. Pearson,* and the admirable and most interesting plans which he prepared showing the actual condition of the work, and the various dates of building which are incorporated in it. These plans, and the facts collected in his report, are in themselves of great interest and worthy of the reputation which Mr. Pearson enjoys as what may be termed a specially archæological architect. So far there will be, we imagine, no two opinions. It is when we come to the use to be made of these investigations that we and many others feel compelled to protest.

To recapitulate the position briefly: the Law Courts have been removed and the west wall and buttresses of the Hall left uncovered. The west wall thus brought to view is found to present much of historical interest. Portions of the Norman wall of Rufus are uncovered, bearing still the Norman masons' marks, and upon this wall are to be seen the traces of a double series of arches, *appliqués*, as one may express it, to the wall between the shallow Norman buttresses, and evidently at the same time as the construction of the large buttresses and flying buttresses built when Richard II. caused the present roof to be added to the Hall. The Norman stonework is of historic interest undoubtedly, though as it is mere masonry, and contains no architectural detail, its value has, perhaps, been a little exaggerated. It is in a condition in which it will not long stand exposure to the weather. The double tier of arches, as well as other indications, leave little doubt of the former existence of a double cloister or range of buildings between the buttresses, either open or closed. Let us then, it is said, restore this double cloister and we shall have the building as it was in Richard II.'s time, and at the same time screen the Norman wall from further injury.

This will, however, cost 21,000*l.* and upwards, and the question must evidently have presented itself at an early stage of the proceedings whether this would not be regarded as rather a costly contrivance for preserving a piece of old wall, of whatever interest. An architectural and practical reason must therefore be found for it beyond this initial one. The architectural justification suggested is that it is an actual restoration of Westminster Hall as it was, and will, moreover, add greatly to the effect of the building; the practical justification, which the whole evidence shows, however, to be palpably an afterthought, is that the lower story of the new cloister can be used as a *porte-cochère*, and the upper story can be divided into committee-rooms, which everybody agrees are wanted.

Taking the architectural question first, we may observe that the style and title of the committee begs the question to begin with, inasmuch as it is entitled "Select Committee on Westminster Hall *Restoration*"; whereas one of the very things which the committee was appointed to consider was whether there should be a restoration at all, and whether the design suggested by Mr. Pearson amounted to what could be properly called a "restoration." Now, of course, if one or two bays of the double cloister existed complete, even in a dilapidated condition, we could then complete all the destroyed portions on the same design, and that would be a restoration in the proper sense of the term. But the case is by no means so. Not a single portion of the original design of the double cloister or double gallery is in existence. The marks of the wall arches and a portion of one or two of the arches are in existence. The foundation of the walls is visible, and the height of the parapet is indicated by the returns on one or two of the buttresses. There is a plan, by Wren, of the walls as they existed in his time, showing some windows rather irregularly spaced, some of them two-lights, and some one-light, but hence it is assumed that there were two-light windows. We may observe in passing that the value of this plan as evidence in matter of detail is somewhat impaired by the fact that it shows the building once existing under the name of Queen Elizabeth's bedchamber as having three-light windows, while Capon's evidently carefully-executed view of the exterior shows the same windows as four-light, with two orders of mullions, a centre principal mullion and two subordinate ones; and no draughtsman could have made such a mistake with the windows before his eyes, if they had really been three-light ones. So that in the only point in which we can compare Wren's plan with an undoubted testimony from another hand it is proved to be inaccurate. Then Mr. Pearson says the parapet was battlemented, *teste* a print of Hollar's, "New Palace Yard in 1647." The actual cloister is not shown in Hollar's plate, but a building which must have been in close neighbourhood with it is seen over the tops of the houses as battlemented, and the roof of Westminster Hall itself, on the east side, is battlemented in the plate. As we have before said, faith in Hollar must not be pushed too far, but we have little doubt, nevertheless, that the parapet was battlemented when it existed. All Mr. Pearson's general presumptions we believe to be perfectly correct or probable. What we wish to point out is that, for all that, he has not a single bit of the old *design* to restore. The views taken by restoring architects on this point are most extraordinary. Mr. Pearson says in his report that in fact little or nothing of the restoration is conjectural. Why, it is *nearly all* conjectural. It is only certain, as Mr. Peddie's questions pointedly elicited (and this part of the evidence should be carefully read when it is published), in regard to the section of the moulding of the parapet, the height of the wall, the thickness of the wall, and the fact that Wren's plan, which, as we have seen, is manifestly not to be trusted for accuracy, shows two-light windows in certain positions. Mr. Pearson, by the way, while admitting that

* See *Builder*, July 26 of this year.

Wren's plan leads to the supposition of one window in each bay, prefers to have two. We have no objection; all we say that it is nonsense to talk about restoring the original design. All that the evidence gives is that something *of that sort* was there; but that what Mr. Pearson has drawn is really what existed no one can possibly say, and therefore to call it the restoration of the cloister is quite a misnomer: it is pretending to do what there is really no means of doing now at all.

Whether the addition will be one of architectural value as increasing the effectiveness of Westminster Hall is another question entirely, to be considered on quite other grounds. If it be so, then it is to be upheld, on the principle on which true architects in all ages have acted, of doing their very best to better the work of their predecessors. It is on this principle that we entirely uphold the raising of the towers at the north end of Westminster Hall; that is a distinctly architectural attempt to bring the façade more into harmony with its surroundings and to give increased dignity to it, on architectural grounds. But we are quite unable to see that the proposed cloister will have any architectural effect in the least proportionate to the amount to be expended on it. In the first place, do what you will with it, it will appear as sunk in a hole. Secondly, the two ranges of low stories, with their low arches and small windows, would not, we think, add by any means to the effect of the Hall, nor were the original cloisters built with that object. The question as to architectural effect is, of course, matter of opinion; the question as to the original meaning and value of the erection which it is proposed to "restore" can hardly be so. There can hardly be a doubt that at no time was the west side of the Hall standing free as it is at present. The known practice in Mediæval plan, to surround the great hall with subsidiary buildings, is confirmed by all the plans or views of the site which are obtainable now, and which, though none of them go back to the Mediæval period, convey the idea that the site west of the Hall must have been long regarded as a place for subsidiary buildings. The First Commissioner told the Committee on Tuesday that Mr. Brewer had informed him that he had "no authority" for the buildings represented to the west of the Hall in the restoration of Westminster, which we published on the 8th. This, we have ascertained from Mr. Brewer, is, as we knew it must be, a misapprehension. What he said was that there is no authority for the architectural style of those buildings.

Then if the original cloister or gallery was probably not seen, or very little seen, from the westward of the Hall, why was it erected? The answer which we believe to be the true one is very significant as suggesting the sharp contrast between the notion of architecture entertained by Richard II. and by the modern Office of Works. The erection was a purely practical one. For reasons of architectural splendour and dignity, Richard II. had put a grand new roof on the Norman hall. For what may be called engineering reasons, it was considered necessary to add large outstanding buttresses and fliers to resist the thrust of the hammer-beam roof, which is by no means in itself a very scientific form of timber construction. The large space between these buttresses was not to be thrown away. Two sets of rooms, or one set of rooms and a covered passage, for practical use, were to be made between the buttresses. The wall of the Hall, having a great additional weight to carry already, was not to be cut into, and the two tiers of wall arches were applied to it between the Norman buttresses, in order to afford a bearing for the ends of the beams, without cutting into the wall. The whole illustrates remarkably that practical spirit which was so far more prevalent in Mediæval building than we moderns, looking back at it through the mist of centuries, are apt to realise. Even the cutting of the curve of the flying buttresses by the upper roof, done here as frequently elsewhere, is an example of that. If architectural appearance had been the main object, it would certainly have been felt that there was an incompleteness in cutting off part of the flying arch in that way. No Greek architect would have done anything analogous to that; it would have vexed his æsthetic sense. But the flying buttresses were the engineering part of Mediæval building, and we imagine were so regarded by those who made them. Looking at the matter now, we should unhesitatingly say that the buttresses and flying buttresses, when repaired and made good where they are dilapidated, which must be done, would present a finer and more interesting appearance to the eye, and tend more to the architectural dignity of the Hall, if this portion were left visible, than the erection proposed to be placed between them. But what we want to emphasise is the radical difference between the motive of the former erection and the motive for the reconstruction of it. In Richard II.'s building the whole motive was obviously a practical one, to utilise space and to combine satisfactory construction with utility. In comparing Mr. Pearson's report and the evidence given before the committee, it is obvious that practical utility was the very last consideration. Mr. Pearson himself makes only a kind of feint of considering it in his original report. In the evidence given before the committee he stated (which ought to be noted) that it was not the case that any pressure had been put upon him by the First Commissioner to adopt this special plan; so that statement, to which we referred the other day as having been publicly made and not contradicted, must be regarded as disposed of. But, then, on the basis of that, Mr. Peddie very pertinently asked what the architect's instructions were, and received the reply "to examine the walls and buttresses with a view to the restoration of them"; and the continuation of this portion of the examination conclusively shows that there was no idea of studying any practical question of convenient additions to the House, until it was found that it would be difficult to carry the matter on antiquarian grounds alone. Mr. Peddie asked further on "if an architect is asked to make additions to a building where utility is to be considered, is it not usual that he should be told what the requirements are, and to provide for them as well as he can consistently with artistic effect?"—a theory which Mr. Pearson, of course, admitted as correct; he could hardly do otherwise without stultifying the architectural profession. "You do not first of all make additions and then find out what the use of them is to be?" continued Mr. Peddie, and equally, of course, received the answer, "No." Yet we say, and we think a perusal of the report and the evidence will satisfy any one who has the requisite knowledge to judge of the matter, that that is precisely the course which has been pursued in this case. And then we come to the question, Of what real utility will these rooms be after all? What is wanted, and what is proposed to be provided?

In regard to this point the evidence of Mr. Charles Barry, given on Tuesday, is very valuable. After stating that Sir Charles Barry had always been of opinion that Westminster Hall had been enclosed, and that the space recently occupied by the old Law Courts had been formerly occupied by the inferior offices of the Palace, he went on to say that his father's plans for the completion of the new Westminster Palace by enclosing the Hall were embodied in a Parliamentary paper which was returned to the House of Commons on May 10, 1855, in a report to the then First Commissioner, Sir William Molesworth. He was thoroughly conversant with his father's views for the enlargement, or what he regarded as the completion, of the Westminster Palace. The scheme was to start with a façade from St. Stephen's Porch, following a line fronting St. Margaret's-lane to the corner where Bridge-street, Great George-street, and Parliament-street intersect each other; to construct at that corner a grand gateway, and to carry another new façade from that point to the Clock Tower. "The idea had been to give the whole buildings as much dignity and unity as possible, to conceal the difference of level between Bridge-street and the entrance to Westminster Hall, and, in possible times of tumult, to give an effective protection to Palace Yard, Westminster Hall, the Speaker's House, and the House of Commons. Sir Charles Barry had attached great importance to having Palace Yard enclosed." Mr. Barry subsequently went on to offer some further evidence of a still more practical character. He said the carrying out of his father's plans was not only the best thing that could be done architecturally, but financially, as it had been officially stated in 1864 that 37,000*l.* per annum was being paid by the Government as rental of various private properties used as offices by Government Departments and Commissions. That sum capitalised at three per cent. would give a million and a quarter of money, and the additions on Sir Charles Barry's scheme could be carried out for half a million. "We hope here be truths" enough.

Such a scheme would provide room for all the functions of the House within its walls. Against this the Office of Works proposition amounts practically to this. We propose to erect some small buildings in imitation Gothic, somewhat like what we believe to have been once there, certainly on the old foundations. They are built mainly to enclose a piece of old Norman wall, which is of interest, but which we are afraid will decay if left exposed. But as 21,000*l.* is a good deal of money to spend on that, we propose that you should have a carriage porch below, with a width barely sufficient to allow two carriages to pass, and height probably not quite sufficient to clear the driver's hat, and we propose that you shall use the rooms over as committee-rooms. True, they are very small in area, and only half the height of the present committee-rooms, but still you can squeeze into them somehow, and it will be such a gratification to think we are in rooms just like those that were there 500 years ago. And the Norman walls, what about them? Oh, they will be left bare, just as they are; it is an uncomfortable finish to a modern room, of course, but then think of the satisfaction of seeing the Norman masonry!

That is what it amounts to, and that is a kind of thing that has never been done in times when architecture was a genuine thing. It is not what Richard II. did. He did what he wanted then; but what he wanted is not what we want now. No people in their senses will be content with low, small, and comfortless committee-rooms, because a use has to be found for a costly piece of archæological trifling. They will not be content with a "grand committee-room" over a horse-stand, because the foundations of a building which once stood in that position have been found. Is it not pitiful, this kind of solemn triviality? Here is the greatest English building of modern times, the home of the Government, still incomplete, and the necessities of the case demanding a large extension of accommodation: and there is the Office of Works and its architect poking about on the ground, finding a bit of foundation here, and a bit of foundation there, and making plans for building up rooms that are totally inadequate for practical usages, and which, architecturally, are to be nothing but antiquarian shams, because rooms of that size were there once. Contrast this sort of spirit with that which is hinted at in one portion of Mr. Barry's evidence:—"His father had altered the east front of Westminster Hall, and he would not have hesitated in altering the west front if he thought he could have improved it." Precisely so. Sir Charles Barry was the last really great architect we had, and, like all true architects, he worked in the spirit of the present, not of the past, and had confidence in his own genius, and did not want merely to imitate what some one had done, or the traces of what some one did under different conditions centuries before. We are not saying one word in derogation of Mr. Pearson's acquirements as an architect and artist in the Mediæval style. If a Mediæval restoration is to be made, we know of no one who will do it better. If Westminster Abbey is to be conserved, we are sure the fabric cannot be in better hands. If a modern cathedral is to be built as like a Mediæval one as possible, we

do not believe any one now living can do it as well as Mr. Pearson. Our own opinion is that such a building is a complete anachronism, and we believe in a generation or two that will be the general opinion. As long as that kind of revivifying of Mediævalism is to be carried out, let it be done by those who have thoroughly studied it. But we deny that that is architecture, in any sense in which architecture is worth anything; and after saying so for years, there seems some little indication that a public opinion in that direction is in course of formation; and we hope such opinion will be brought to bear on the present case. If the proposed so-called "restoration" is carried out, money will be thrown away on buildings which are not even archæologically what they profess to be, which are (one may almost say) worse than useless for any practical purpose, and which will, at the same time, stop the way for real and more important improvements for a long time to come. The one point in Mr. Pearson's propositions which we can endorse, the raising of the towers and the modification of the north end of the Hall, which is really a work of architecture and not of antiquarianism, is contradicted by his proposed north-west building at right angles to the Hall. The raising of the towers seems in itself like the commencement of a grand completion of Barry's scheme, by rendering the front of the Hall at least in harmony with such a scheme. But then, just to gratify an archæological sentiment, we are to drop down upon this poor and weak-looking building at the prominent angle of the site, the existence of which would be an effectual bar to the continuation of Barry's design. And it is, perhaps, our duty to say openly, as exponents of professional opinion, what we know many people think, that this scheme is being pushed through to satisfy the *amour-propre* of the outgoing First Commissioner of Works. Now, we like to see any one thoroughly believe in himself;

> "For thoroughly to believe in one's own self,
> So one's own self were thorough, were to do
> Great things,"

as our Poet-laureate happily puts it. But the Chairman of the Committee believes in himself without being thorough, so far as architectural subjects are concerned. He obviously does not understand what "architecture" in its true sense really means. He has got an *idée fixe* which he is determined to push, and his personal feeling in the matter was obvious enough in his cross-examination of the witness who was most decidedly opposed to him, Mr. Somers Clarke. But, as we also thoroughly believe in ourselves, and are convinced that something foolish and unmeaning is proposed to be done at a considerable expenditure of public money, we must be outspoken in opposing it. That we are not animated by any general desire of opposition must, we should hope, be evident from our support to the proposition for remodelling the north end of the Hall. That is genuine architectural work: but as to the rest the Office of Works has got entirely on a wrong tack. They have made a sham antique of the Tower, and now they want to make a sham antique of the side of Westminster Hall.

RAILWAY RATES: A NEW PHASE.

IT has been a matter of considerable surprise to many that the railway companies should have apparently taken so little notice of the agitation which has been going on for a revision of their powers. Mr. Chamberlain's ill-fated attempt to deal with the difficulty did not commend itself either to the companies or the traders. Certain clauses were admitted by both parties to fairly meet the case in particular points, but others were threatened with the strongest opposition, and the Bill, as a whole, was looked upon with disfavour by both. After being printed and circulated and criticised by all parties interested, it fell to the ground, there being but little encouragement for proceeding with it, and but little time at the disposal of the Government for discussing it. But the attention which has been directed to the subject, together with the general depression in trade which exists, has made it a burning question.

The traders have been advised to adopt aggressive tactics by extending the canal systems, and making them, by the use of steam haulage, powerful competitors of the railways. The complaints of the traders, who consider that they can see in excessive and unequal rates an encouragement to foreign competition, and, consequently, a reason for home depression, have been many and loud. Still, the companies (until very recently), made no sign. But those who wondered at their silence have now been still more astonished to find that they were all the while preparing for and considering their next move, and it may be fairly said that they have made a bold one. They have taken the initiative for a fresh encounter by giving notice of their intention to apply for fresh Parliamentary powers next Session, and have thereby quite taken their opponents,—or, their customers, we should perhaps say,—by surprise. The *Times* of the 17th inst., in an able article on the subject, gives an outline of the course which, it is believed, the companies intend to adopt. To put it briefly, they offer to surrender certain powers with regard to maximum rates which they possess, but seldom use, and, in return, ask for sanction to certain charges which they are in the habit of making for terminal services, but which they have not legal powers to enforce. Other minor matters will also be introduced. The maximum rates authorised by the Acts relating to the various companies stand for little or nothing in practice, but have proved very serviceable when complaints have been laid against excessive freight charges; for the companies have frequently been able to show that they have not enforced their full powers, even in cases where the rates have pressed so heavily upon trade as to almost cripple it. The incomplete and inadequate nature of the clauses affecting the rates is well known, and no provision is made in the majority of them for terminal charges; but the companies are generally able to provide for a proportion of the rate charged being put aside for these services, the total charge being still within the statutary limit.

This is the explanation of the remark sometimes made by railway managers, that the terminals question is one which affects them only, and not the public. The latter, naturally, do not see that they have no interest in the matter. They think that they ought to know how the rates they have to pay are arrived at; while the railway companies,—when the rates charged do not exceed the authorised maximum,—do not see that any one else has any interest in their apportionment. Reform is desired by both parties to the controversy. The traders, finding the high rates defended and allowed by the statutes, seek to have the latter revised; while the companies, finding terminals disallowed by courts of law on account of their not being authorised by the Acts, are endeavouring to have these charges legalised. The remarks just made as to the statutory rates being high enough to allow of a portion going for terminal services, only applies to traffic conveyed for long distances, as they barely cover cost of haulage in the case of short journeys, and it is in these latter instances that the companies feel the necessity for legal power to charge for terminals. It was very soon seen when Mr. Chamberlain's Bill was published that one effect of it would be to confer a certain amount of power upon the companies with regard to terminals; and the traders resolved to oppose the Bill. They seem to have entertained a feeling of mistrust of Parliamentary interference, and this will explain why the recommendation to seek for relief by fresh competition was so favourably received. In answer to this the companies have made this unexpected move, and may be said to have given "check."

The other side having abandoned Parliamentary tactics, the companies have resolved to try them for themselves, and by introducing a number of private Bills, to force the question upon the attention of the legislators. The traders, from past experience of railway legislation in which the companies take the initiative, are naturally under grave apprehensions as to the result, and have already decided to oppose the Bills. It remains to be seen whether the concessions offered by the companies with regard to their maximum rates for unenumerated goods is a practical one, but as the enforcement of such rates would frequently be ruinous to their customers (and consequently to themselves), it does not appear that they would be sacrificing much. Some alternative classification would have to be adopted if the antiquated and useless ones found in the Acts should be superseded, and it is understood that some, at least, of the railway companies propose to embody such a classification in the proposed Bills. This is a matter which should be carefully watched, as it is highly desirable that any changes in the law on the subject should have the effect of making it clearer and less open to dispute, as well as equitable and comprehensive. With regard to the terminals question there is much to be said on both sides, and it depends upon the extent of the demands made by the companies as to whether uncompromising hostility would be justifiable; for it has been frequently shown that the expenses connected with the handling of goods traffic,—independently of haulage,—are very considerable. When the matter comes before Parliament for discussion there will be plenty of evidence bearing upon it to be found in the reports of the Commissions which have been appointed to consider the subject, and, like every other public question, it will be found to possess two sides. The railway interest is very strongly represented in Parliament, and could carry anything that was not strongly opposed, so that there will probably be a somewhat sharp conflict. The questions at issue have been very fairly and impartially stated by the *Times*, and the hope therein expressed that a satisfactory solution may be arrived at will be echoed by all concerned.

NOTES.

THE deputation which waited on the President of the Board of Trade at the close of last week, to urge a modification in certain important clauses of the Electric Lighting Act, did not succeed (to use a phrase which has been applied "in another place") in drawing the badger. The deputation could not have had a more effective spokesman than Sir Frederick Bramwell, or one better up in the facts of the case; but the main point of the deputation, the repeal of the 27th clause. which gives compulsory power to local authorities to purchase the undertaking at the close of twenty-one years, was not gained They were not, perhaps, sanguine about it, as one of their number candidly admitted that the companies had agreed to ask for the total repeal of the clause in hopes of getting a modification of it. The existence of the clause is a striking indication of the manner in which the public mind, and through it the Governmental mind, has been impressed by the disadvantages arising from the great gas and water monopolies. They have resolved that there shall be no more such, charm they never so wisely. Sir F. Bramwell argued that this was practically a prohibition against investing capital in electric lighting, and Mr. Chamberlain went so far as to promise to give his best consideration to any clause forwarded to him for so far modifying the operation of clause 27 as that it should no longer act as a deterrent to capitalists. But beyond this he would not move. As to the further questions raised by the deputation, in regard to official regulation of the method of supply adopted, and freedom of contract between the companies and the consumers, although the latter demand is one not to be rashly granted, the method of supply should certainly, in the present stage of electric lighting, be left as much as possible to the skilled professional advisers of the companies. We are not yet in a position to dictate by law what is the best and most scientific method to be adopted in the interests of the public. The thing is still a gigantic experiment.

FROM a question asked in the House on Monday evening it appears that Messrs. Leeming have completed certain alterations to their War Offices design which were recommended by the Office of Works, and that the designs have now been approved by the First Commissioner. No work will be commenced, however, until a vote has been taken, and the final drawings will be exhibited to members.

THE Fine Art Society send us an impression of the fine line-engraving by Mr. Lumb Stocks of Sir F. Leighton's "The Sister's Kiss," which will be remembered two or three years ago in the Academy. This, which has occupied the engraver for more than two years, is a fine example of that forcible and masculine style of engraving in pure line, which is a far higher and more artistic method than that pretty and spotty style for which Bartolozzi deserted line, and which recent fashion has brought so much into notice again. Modelling surfaces by contour lines (which line-engraving really is) takes much more draughtsmanship out of a man than modelling by stipple. The excellent qualities of Mr. Stocks's engraving, however, do not reconcile us to what we have always felt to be a defect of composition in the group,—the position of the right arm of the young woman so that at first sight it appears like a continuation of the figure of the child behind her.

AN interesting relic of London before the Great Fire will probably shortly disappear. Staple Inn, Holborn, is said to have been sold to Messrs. Baxendale (Pickford & Co.), for 80,000*l.*, and will be converted into a depôt. The quaint entrance gateway, the picturesque houses in Holborn, and the interesting hall, with its prettily-designed turret, must we very much fear, almost as a matter of necessity, be destroyed in order to adapt the site to its new use. The ancients of the Society have divided the plate belonging to the Society between themselves. The ancients of Barnard's Inn appear to intend to pursue a similar course: they have divided their plate, and propose to let their hall. Barnard's Inn is described by Dickens in "Great Expectations" as "a club for cats," and it was here that Pip took chambers when he first came to London.

THE School Board of Edinburgh have resolved to make certain alterations and additions to the High School buildings. The additions are to consist of a gymnasium and a new janitor's house, the present janitor's house to be converted into a swimming-bath. The gymnasium is to be erected on the playground, to the north-east of the school buildings, and externally will be in keeping therewith. The interior will measure 50 ft. by 28 ft., surmounted by an open-timber roof, 26 ft. high at the apex. The walls, reaching a height of 18 ft., will be lined with pitch-pine. Suitable dressing and retiring rooms form part of the scheme. The new janitor's house will be erected at the western gateway, and will consist of a one-story building, with Greek details conformable to those of the school. The house to be vacated by the janitor, which forms the westernmost of the group of the Grecian buildings, and consists of two floors, is to be gutted and formed into a bath, 32 ft. long by 15 ft. wide, having around it a platform, with dressing-rooms, shower-bath, &c. The High School was the most successful effort of the late Mr. Hamilton, and is considered one of the best adaptations of pure Grecian architecture to modern purposes. The details of the elevations of the new buildings will require careful consideration.

IT is worth noticing, as a sign of the times, the prominence that is being given, in the proceedings of societies dealing with social and financial matters, to the various aspects of the condition of the labouring classes. The programme of the Statistical Society, which we have before us, contains no fewer than five, out of a dozen or so of papers to be read during the session, on working-class questions, viz., by Mr. J. S. Jeans on "English and Foreign Labour compared"; by Mr. G. Phillips Bevan on "Thirty Years' Changes in the Occupations of the People"; by Mr. R. Price-Williams on "Changes in the Trade Population of London"; by Mr. E. W. Brabrook on "Friendly Societies"; by Mr. Ravenstein on "The Laws of Migration." Moreover, a conference will be held some time early in the year, which comes partly within the scope of the Statistical Society, to discuss the wages question and the relations generally between work and pay. The operative classes, whatever may be their grievances, can scarcely complain that their position is not the subject of much anxious thought.

A RECENT number of the *Englishman's Overland Mail* contains an interesting account of the successful working of the "Calcutta Canals." These works were originally proposed by a Major Tolley in 1775, and from small beginnings have progressed so satisfactorily that they are said to be "more eminently productive works than many which are in that category." Like many other improvements in India, they were not allowed to be carried out without much opposition, and curiously enough, the chief opponents were "the Board of Customs, Salt, and Opium," who considered the results were not likely to justify the outlay, and that the whole traffic would not produce a revenue of 5,000*l.* At the present time, however, 55,000*l.* are annually realised. The best proof of the usefulness of these canals is shown by the fact that the goods delivered on the canal banks amount in weight to more than one third of the aggregate deliveries of the three railways which converge on Calcutta, including the great coal traffic of the East Indian Railway, and averaged during the last three years ten million tons annually, valued at five millions sterling.

THE same paper gives, however, a less favourable account of the results of navigable canals in India generally. These works are, for the most part, connected with the great irrigation schemes, in which the primary use of the canals is for agricultural purposes. The revenue derived from the sale of water for irrigation being sufficient to yield a handsome rate of interest, the advantages derivable from navigation are thrown in almost free, and consequently their advantages as means of communication are not to be measured by the amount received from tolls. The following particulars of the traffic are given. In Madras the three principal lines conveyed as follows in 1882-83:—

	No. of Boats.	Tonnage.	Value. £.	Miles
The Buckingham Canal	57,118	574,010	2,925,192	260
The Godavery System	31,307	268,391	1,536,900	458
The Kistna System	25,502	121,579	739,046	278

For Bengal the figures are,—

The Orissa System	83,424	636,000	2,372,500	240
The Calcutta Canals	210,104	2,691,000	5,663,400	32
The Sone Delta System	7,615	78,950	379,650	218

For the N.W. Provinces,—

The Ganges Canal	7,134	90,924	487,300	412

Except on the Orissa system the ton-mileage is not accurately kept, and, therefore, a comparison with waterways in other countries cannot be usefully made.

THE case of the obstruction in the roadway at Hammersmith, by the barrows of the costermongers, to which we referred lately, came before the Home Secretary on Friday last, in the shape of a deputation of the ratepayers of Hammersmith to protest against the action of the Fulham Board of Works in committing men who were endeavouring to earn their living honestly. Sir W. Harcourt, while sympathising with the costermongers in their troubles, suggested that it was quite possible for them to arrange their barrows so as to leave sufficient space to escape the charge of obstruction, so we hope this solution of the matter will be arrived at. The nuisance and obstruction constantly caused in certain parts of London by the apparatus of street merchandise is so great, and so unlike what is permitted in other cities, that a practical protest must be made against it.

THE question as to the permission to use the Main Drainage embankment as a boulevard, to which we before referred, and to which the Board of Works gave no answer except a *non possumus*, has elicited a somewhat more definite explanation from Mr. Russell Talbot, the Medical Officer of Health to the North Poplar District, but whether he is speaking officially or not does not appear in his letter in the *Times* of the 26th. He says that he had before reported to the Metropolitan Playground Association that as a playground or promenade the embankment would be a failure, owing to its running through land at present entirely occupied by factories of a most offensive character. That, however, is surely for the consideration of those who wish to walk there, unless the Board of Works is going to assume the attitude of an anxious parent watching over the welfare of the inhabitants of Poplar, and forbidding them to do what would disagree with them. It seems rather pathetic that people should ask as a favour to be allowed to walk on the covering of a sewer between offensive-smelling manufactories, and be denied even that slender boon. As giving pedestrians a short cut from Victoria Park to Stratford, it would, Mr. Talbot admits, be useful. Let the people have the short cut, then. They cannot well damage the sewer-arch. The matter was urgently pressed by Lord Cowper in the House of Lords on the 24th.

STATEMENTS which have been made as to the improvement in the punctuality of the Underground trains since their breakdown during the first few weeks of the Inner Circle completion must not be accepted too readily. There is still a great deal of most vexatious delay, not so much on the Inner Circle itself as on the outlying branches, the trains from which have to get into the Circle at various points. On the Putney Bridge line it is quite common to leave out a train on occasions, as a quiet solution of the difficulty arising from overcrowding the system of lines and professing to do more than is possible. There has been for some reason a notable deterioration in the gas supply to many of the trains lately, the carriages being miserably lighted. We may call attention also to the absurd mismanagement in regard to notice-boards of the destination of trains. These are all placed, when placed (trains are frequently run without), on the usual platform side of the carriage, the left-hand side looking in the direction of travelling. But at Earl's Court junction a large number of trains are necessarily brought up with the right side to the platform, to allow of easily changing to another train, and as the company cannot afford a notice-board on each side, there is constantly to be seen a train standing with the direction on it, "Victoria and Mansion House," which is really travelling in the opposite direction. The *habitué*, of course, knows it is not going to Mansion House, but he has no clue to where it is going; and this at a crowded junction, where there is particular necessity for clear information. The trouble, and hurry, and the pestering of the officials with questions, which this piece of blundering causes about every ten minutes of every day in the year, is quite annoying to witness. It can all be remedied at once by having reversible direction-boards on *both* sides of the carriages, with the "up" direction painted on one side of the board, and the "down" direction on the other, the board to be turned at the close of each journey. If a company cannot attend to such a simple and obvious matter as this, no wonder they fail in larger requirements.

A Correction.—In reference to a foot-note in our issue of May 3rd last (page 604, vol. xlvi.), to the effect that we were authorised to say that some extracts from the Annual Report of the Institute, which had been published elsewhere, had been obtained "by dishonest means," we have received information whereby we are satisfied that those words, quoted in good faith from a communication sent to us, were not warranted by the facts, and we regret that we should have given them publicity.

PROVINCIAL ARCHITECTS AND THE INSTITUTE.

We have received the manuscript of a paper on the Institute of Architects, read before the Leeds and Yorkshire Architectural Society by Mr. J. W. Connon, and which may be described as a kind of "bitter cry" against the Institute, and like some other bitter cries of which we have heard, it contains, with some truth, a good deal which is exaggerated and unfair. Mr. Connon traces the history of the Institute from its foundation, to a considerable extent on the basis of papers furnished him by the Institute; and as he admits their chivalry in furnishing him with the weapons for what he frankly told them was to be an attack upon them, he might very well have considered whether a character for any sort of chivalry was compatible with some of the charges which he brings against them. Among other things, Mr. Connon is exceedingly indignant with the Institute because when in 1858 they discussed the principle of the system which was then suggested and occasionally put in practice, of the competitors deciding architectural competitions by their own votes, they suggested among other drawbacks to such a system the difficulty of preventing any possibility of collusion for the serving of private interests. He says it is "a matter for shame that any one of the leading members of the profession should have made so gross a charge of want of the commonest sense of honour against the bulk of his fellows." It is Mr. Connon who wants the sense of logic. Such a consideration was not a charge against the bulk of professional architects; it is only a recognition of the fact that the profession has, like other large professions, its unscrupulous members. Human nature is unhappily human nature in all places. It would probably be supposed that a committee of dignitaries of a great university, for instance, might above most bodies be trusted to exercise the right of voting among themselves; yet there is a case which was long a by-word in one of our universities, where a man in that position did gain an appointment by a vote given by himself for himself. But when, after this, Mr. Connon goes on to charge the Council of the Institute with having favoured the principle of appointing a professional assessor to decide competitions, because they hoped to receive commissions as assessors themselves, and furthermore that they had supported the principle of prior sketch competitions, in order to have two commissions instead of one on each competition, he does not appear to perceive that he is making a charge still more unwarrantable and defamatory, and one withal so ridiculously improbable and baseless that we hardly suppose any of those to whom his paper was read could have credited it for a moment, or even that Mr. Connon seriously believes it himself. These and other violent and exaggerated charges render a great part of the paper such as it could serve no possible good purpose to print, except to exhibit Mr. Connon's want of temper and moderation in speaking of other people, and to invalidate the force of some of his other charges, which, though expressed with equal violence of language, are not in themselves by any means so unreasonable. That the Institute has throughout its career been very slow, very procrastinating; that it has let pass, over and over again, the opportunities for coming to the front, and initiating good works, for which time and opportunity were crying out, we do think; and we also sympathise with the feeling repeatedly expressed by various provincial Fellows of the Institute, and by provincial societies, in their corporate capacity, that the provincial members have not by any means a sufficiently important part in the work and government of the Institute, and that any steps by which they could be placed in a less disadvantageous position in comparison with the town members would probably be for the good of the whole body, by rendering the Institute more practically a National rather than a Metropolitan body. By way of giving voice, therefore, to what we suppose must be taken to represent the opinion of a certain proportion of the profession in the provinces, we give some of the concluding portions of Mr. Connon's paper:—

"The Council must be held to have, in their own inimitably solemn way, always looked with jealous and praiseworthy care after the credit of the body to which they belong, and to have invariably insisted, as far as possible, upon each member of the Institute holding the honour of his individual conduct with the nicety of conscientious precision. One who with his headlong self-will has done much harm, with much good, to the Institute, Mr. C. Barry, truly said, 'One of the chief objects of its (the Institute's) original foundation was not alone to promote professional study, research, and talent, but to maintain and enforce professional honour.' Such was the declared intention when the first address was issued. 'With the object of gaining at the hands of the public a reliance on those professors, who are *bonâ fide* architects, one of the principal features will be the maintenance of a high standard of professional character and honourable practice among the members.' The intention, as usual, was good, but the transference of that into deed was always more than the apathy of the Council could attain to. The first of all questions affecting the honour of the members of the Institute was that of the alleged reception of illicit commissions by architects. This charge has been a prominent one for all the fifty years that the Institute has existed; it has been reiterated again and again; yet the utmost notice that could be wrung from the Council was the indifferent one of denying the truth of the accusation, or issuing a feeble manifesto threatening offenders with the rigour of By-Law XXIII. Something more than this is demanded from the national centre of architecture. An efficient Institute should be strong enough to stand up boldly for the honour of the profession and for the open punishment of those who violate the laws which regulate the conduct of gentlemen. Year by year the public complain more bitterly of architects; formulate more clearly their charges, more widely publish around their accusations. Attempt after attempt has been made to arouse the attention of the Institute to the true position of things, but in vain.* The virtuous decision to live down scandal is so much easier than to put on breast-plate and helmet, and smite your enemy hip and thigh. Vile accusations of the acceptance of fiduciary commissions are repeated with recurring monotony, and are simply met by the comfortable assurance that if some vindictive outsider, who would rather make the charge than support it, will, with infinite trouble and considerable risk, substantiate the accusation, the Institute will promptly, with bell, book, and candle, but with the greatest secrecy and politeness, excommunicate the delinquent, and no one will be one penny the worse. Such feeble inanity is not enough. A vigorous and earnest Institute would do one of two things, or both: it would compel the accuser either to withdraw or substantiate his shameful charge, or it would consider it its business to search out and discover the member who had disgraced his fellows, at any cost of trouble or expense, and would deal with him in the most public manner, —would expose the iniquity and baseness of his crime,— would, in short, metaphorically, 'Hang him to encourage the others.' That the Council itself could undertake sbch a task I do not maintain. I am not so unjust as to expect men who already devote so largely of their own valuable time to unrepaid work to do anything of the kind. But an Institute enjoying the confidence of the profession could easily afford a special and legal Secretary to the Professional Practice Committee, and could then efficiently watch over the moral behaviour of the members so far as those affect their connexion with the Institute. To treat such charges with what is called the contempt they deserve is but the feeble refuge of the idle. ''Tis the voice of the sluggard who would slumber again.' The contempt they deserve falls not on the accuser, but on the indolent accused, who allow judgment to go by default.

When an institute has looked to the honour and to the material interests of its members, it might fairly be expected to give some attention to the claims of those whom unmerited misfortunes have brought them within the need of the aid of their more successful brethren. The members of the Institute recognised this claim; and in 1848 a meeting was called 'to take into consideration a memorial submitted to the Council praying for the formation of a Benevolent Fund for the less fortunate members of the profession.' The reception of this petition was the customary one. For by the light of experience we can now expect confidently the result of any movement submitted to the guidance of the Council. Its suggestion is hailed by them with fervid enthusiasm. They declare their burning desire to see it progress as it deserves, but so serious matter must be dealt with only after reflection and grave consideration, and the members may rely upon their concentrated attention being focussed upon this particular question. Unless pertinacious and objectionably active individuals keep stirring up their sleeping minds, this is all that is ever heard about the matter. If repose is not to be theirs, and they are kept unwillingly awake, in the course of a period varying from two to twenty years, they announce with much pride and satisfaction the appointment of a committee to consider and report. This new body also deliberates for another two or three years, and then duly announces that the matter is one for further consideration. This farce is repeated, until exasperation establishes some other body, who do the work for themselves, and are duly and heartily congratulated by the Institute on the fact, which then proceeds to plume itself on the assistance it has been in the promotion of a movement always dear to the heart of the Council. This procedure is only varied when an immediate mode of quashing the whole thing is discovered. In the case of the proposed Benevolent Fund, this was so, the Council declaring within a month of the appointment of the committee that the idea was inadmissible under the terms of the charter,—a document that has often served to screen the Council from the need of carrying out essential reforms. In 1851 the Architects' Benevolent Society was formed by efforts outside the Institute, and an essential work inaugurated, that it would have been an honour and glory to the Council to have instituted. The claims of charity appealed in vain to the occupants of the Council-chamber, the Architectural Benevolent Institution having to create itself to replace the niggard inactivity of the central authority. When such a fund was established by the engineers, it was taken up, as it should be, by the Council of the Institution of Civil Engineers, the President and two of the Council being, *ex officio*, three out of the seven persons who have control of the invested funds devoted to aiding impoverished members of the Institution. The engineers, while always encroaching on the domain of architects, show also how nearly they come to deserving all they get, by managing their own affairs in all respects better than we do.

The weak place in the management of the Institute has always been the apathy of the Council. We scarcely expect this to be admitted by themselves; yet it is a frequent complaint to be found in the addresses of different presidents. It will be sufficient to quote one, the late Sir Gilbert Scott, who said, 'I also know how our meetings have come, from our lassitude and half-heartedness, to be voted a bore; and how the younger members of the profession fight off from joining us from a feeling that we have allowed our Institute to become too much a perfectly-constructed automaton, and too little a thing of earnest and zealous vitality. It may be worth considering, too, whether the self-elective character of our Council might not be moderated, and a certain number of seats be reserved to be filled by the general assembly.' The recognition of the truth of the last remark has occasionally, at periods of special excitement, when the inaction of the somnolent Council has aroused the patient contempt of the Fellows into active indignation, brought about that some gentleman,—of admitted enthusiasm in his profession, whose vigour of character and earnestness of belief in the future of architecture has drawn around him the well-earned support of those architects whose professional life extends outside their offices and can spare some little interest for the general well-being of the body,—is elected to the select circle of our rulers, and is heard of no more. In some parts of the country are found springs whose dripping waters have the property of depositing a limestone coating over objects placed beneath them, and of petrifying them into a semblance of stone. So when the new member, hot with burning enthusiasm, eager for reform, spurred by the expectations of those who supported him, enters the Council chamber, his ardour is cooled by the perpetual dropping of cold water on all his favourite schemes, his eagerness is damped by the chilly

* Mr. Barry, if we remember right, when President, openly said that if any such charge could be substantiated against a member of the Institute, he would see that such member was expelled from it. Could he have said more? —Ed.

inanimacy of his colleagues; the very life within him is petrified by the effete surroundings, and in due time he takes an equal place with the other fossils round the Council Board.

I have before made allusion to the systematic and continuous neglect of the country members. To that part of the question I will return for the sake of dealing with one or two other points, beyond the grievance mentioned of the lack of representation on the Council. It cannot be alleged that the interests of the country members were neglected because their existence was accidentally forgotten. That lapse of memory only took place when changes were to be made or honours to be distributed, never when funds were wanted and increase of members was sought after. The records of the Institute repeat one continuous complaint of the lack of provincial members,—of the way in which they held aloof from joining the Society. But the records are silent always as to any means being taken to make it worth their while to join,—of any effort being made to place them on an equality with the London men. They are prolific in promises,—barren in fulfilment of them. That the Institute should, amongst its members, count more than a third of provincial men is marvellous considering the treatment that has been dealt out to them. It is now seven years since the subscriptions of London and provincial members were equalised,—an implied promise being inserted in the President's address that an attempt would be made to increase the influence of the provincial members, and to afford them additional advantages corresponding to the new taxation they were compelled to bear: a promise, it is needless to say, that was promptly forgotten when the financial juggling trick was successfully accomplished. Of flattering we have had enough. We demand a food more substantial than the windy utterances that for years have done duty for the attentions we have a right to call for. With a solitary exception or two, so rare as to need most careful research to discover, no country members have served in the many committees appointed at different times for various purposes. Take the later ones only. The examination committee, which settled on the scheme for compulsory examination of Associates, was composed wholly of London men. The Architectural Competition Committee of twenty-two members did not include one provincial name. At the present moment the provinces are unrepresented in the Professional Practices Committee, the Special Light and Air Committee, the Committee for Conservation of Ancient Monuments and Remains, the Finance Committee, and the Library Committee. The first of these, the Professional Practices Committee, is a dead letter without proper provincial representation. This body makes rules, and the Council proclaims the necessity of discipline amongst members of the Institute, and that all should comply with the regulations made. This is impossible when they are drawn up by one section only of the profession, that, too, the smallest, regardless of the opinions and wishes of the majority. The demand, under present circumstances, is an intolerable one, and cannot but be scouted as unreasonable and absurd. The Institute has too long been a mere clique of London architects, a private club of metropolitan Fellows whose aim is peace and profit for themselves, and who would fain be left to the enjoyment of the preprandial chat round the Council Board, and the agreeable dinner which follows, the enjoyment of which is so much enhanced by the feeling that they have previously satisfactorily disposed of the business of the head organisation of English architecture. The clique must be broken up, the Metropolitan Vestry Board of the profession dispersed, and a Council elected that will be representative of the nation and not of a mere city, however important and cosmopolitan that city may be. An infusion of the robust common sense of the North, with even something of its rude outspokenness that says plainly out the true definition of the vacillation and feebleness that have for fifty years characterised the work of the Institute, would be invaluable, and must be brought about. Its policy of meddling and muddling is inevitable. It cannot be otherwise. It affects to speak for the country, and knows nothing of the practice and feelings of architects outside the cab radius of London. One monotonous recurrence of ill advised advance and inexcusable retreat makes the record of what it has mainly done for architects. The Council of Compromise must make way for the Council of Courage. Of promises and fair words we have had enough, of acts of justice and fairplay none. The hands are the hands of Esau, but the voice is that of Jacob, who stole his brother's birthright.

To conclude remarks, already too long, it may be inquired, What do country members in particular demand? To a great extent an answer has already been given to such a question, but there is one thing in particular which carries within it the possibility of all the others. That is a vote by proxy. Without that all idea of justice to provincial men, of giving them any share in the control of things, is mere nonsense. No influence can be wielded by country members without it. The existing need of the presence of those who vote simply deters any but Londoners from ever troubling their heads about the affairs of the Institute. The vote through which alone they can make their influence felt is too expensive a luxury for any but men of abundant wealth. Let me give an example, my own. Last year I was anxious to exercise my right of franchise in the question of a diploma. Twice I specially journeyed to Town for that purpose, and each time, without notice, the matter was adjourned. Assume, which I have no grounds for doing, that the ballot is taken the next time the question is raised, and that I am foolish enough to try once more to be present as a voting Fellow of the Institute, let us see what that vote will have cost. Three railway journeys to Town at 2*l*. 10s., 7*l*. 10s.; three days' hotel expenses at say 15s., 2*l*. 5s.; three days' time at 5*l*. 5s., 15*l*. 15s.; altogether the sum of 25*l*. 10s., as the cost of exercising the franchise by a country member at the Institute. There is no need to enlarge upon the bare statement of fact, and no need to ask why provincial members take so little interest in an organisation in which they cannot reasonably make their influence felt. The position taken up by the Council has always been that to grant this demand for voting by proxy would be to run counter to the plain directions of the charter. I venture to say that it would not. And I venture to say, too, that the charter has never yet stood in the way of the Council when they wished to break through its clauses. They could stretch their consciences sufficiently to do this when they desired to establish a new class of members under the name of Honorary Associates, in direct defiance of the words 'And our will and pleasure is that we further grant and declare that the Institute of British Architects shall consist of three classes of members, to be respectively called "Fellows," "Associates," and "Honorary Fellows."' They wanted the guineas of a new class, and no charter was allowed to stand in their way to prevent them getting these. The Council in 1877 got, by fair promises, the guineas of the provincial men, but they have no wish to give them the right to vote, lest they should be speedily called on to dance to a tune that would not be of their own selection. In 1858 the then president (Earl de Grey), along with other members, offered to the Institute shares in the Architectural Union Company. To hold these was distinctly illegal, yet the Council had no difficulty again in overreaching the law for the sake of gain, the secretaries being put up as the nominal holders, and to represent the Institute. On another occasion, the Council desired to alter the mode of election of Fellows, so as to require a majority of four-fifths of the votes given to entitle to success,—a proposal so clearly contrary to the letter and the spirit of the charter, that the consulting solicitor at first plainly ruled it to be inadmissible. A second attempt to persuade their solicitor to more obliging manners was victorious, and he decided that the mention of a bare majority in the clause of the charter was only intended to apply to *general* meetings and to Council meetings. Ordinary or sessional meetings, on the other hand, not being mentioned in the charter, were not, therefore, considered subject to the clause. The Council profess to feel acutely the difficulty which prevents their granting to country members the right of voting by proxy. Here is a clear way out of the block. General meetings called for the election of officers are subject to the regulations of the charter; ordinary meetings, by the decision of the Institute's solicitor, by the acquiescence of the Council, are not. Let all matters of importance be decided by ordinary meetings, which are not controlled by the charter; let general meetings for the election of officers, which are so controlled, be preceded by an ordinary meeting, at which votes by proxy will be received, and which will decide in that way what names are to be submitted for formal acceptance by the following general meeting. This plan is simple, is perfectly legal, or else the Council have been acting illegally for years back, and permits of the exercise of voting by proxy, which is the chief demand now made by country members. The proposal is so convenient that it is astonishing the Council should never yet have seen so easy a plan for granting a boon which they claim to have been anxious to give to provincial members. If an ordinary meeting has the right to act contrary to the charter,—and the Council say it has,—there is no reason whatever why an ordinary meeting should not decide what names of officers should be submitted to the general meeting, and the general meeting certainly cannot elect officers against the voice of the ordinary one if only a sufficient number of names to fill vacancies are submitted to it. All other questions of importance outside that of electing officers need never come before any other than ordinary meetings, and, as voting by proxy is admissible at these, they not being under the charter, the whole question rests with the Council. If they still find a way by which to avoid giving this just right to country members, it is because they seek not to grant it, but to discover some plausible excuse for not doing so.

My indictment of the Council is by no means complete, and has omitted mention of innumerable sins of omission and commission. If the list of these is not exhausted, your patience must be, and I have, I think, said enough to sustain my position. It will be urged that I heap up blame too deeply on the Council, and that no amount of zeal or skill could have achieved all that I appear to demand from them. That it is too much to expect that all the reforms in the profession which I have incidentally mentioned should be brought about, I at once freely admit. But so long as none of them have been seriously attempted, I am justified in blaming them for the want of any. The policy of the Institute from the day of its foundation to the present time has been that of shelving all inconvenient questions, of adjourning all serious work, of shirking every great difficulty. Beyond all other matters, it is deserving of the reprobation of all true architects for the deliberate way in which it has ever permitted itself to remain weak and uninfluential when it might have been strong and powerful; to be despised and neglected when it might have been venerated and courted, by passively allowing itself to be a Vestry when it might have been a Parliament; to remain a private club when it might have been a National Institution.

It may be assumed that I have no right to blame the Institute for the position of architecture to-day. I cannot concede the point. The Council stand as the recognised exponents of our professional position to the public. As such they must accept the blame if the profession loses ground before the outside world, even as they would arrogate to themselves the praise if the reverse had been the result of recent years. Scant respect must be the inevitable result of the contemptible exhibition of feeble vacillation which the Transactions of the Institute disclose. The burning question of competitions, with its intricate difficulties and its corresponding importance, is handed over to be dealt with by a committee outside the Institute, the Council only interfering to insert a mischievous and uncalled-for clause, and so its plain duty is cheaply shelved. The duty of maintaining some show of student education from year to year met with recurring neglect till a new organisation took up the work so shamefully forgotten, and by its vigour and energy struck a success that might have been the Institute's years before, and showed that the profession had within it a life and earnestness wanting only leadership to be animated into concrete activity. The universal demand that our profession should be brought up to the level of others by the institution of some qualification marking the capability of each member of the Institute, was met by a ridiculous half-measure, which closed the doors of the inferior grade of membership and threw wide open those of the superior to every charlatan who assessed the value of the title of Fellow at four guineas per annum. When contemptuous indignation covered with confusion the absurd attempt to

set up a diploma fore-doomed to ridicule by the very action of its promoters, the Council scared themselves, like children, with a legal bogie, built up by their own ingenuity out of an ambiguous phrase in a worthless charter, and shook their ghost of conveyance parchment, inflated with their own fears, as a justification of their failure to fulfil an admitted responsibility.

Vacillation and procrastination. These are the special characteristics of the Council. Questions of the gravest importance have been before them for years, till every conceivable resource of prevarication has become exhausted in the endeavour to adjourn without rejecting them. Such is not the conduct likely to forward the interests of an important profession, and to maintain the dignity of the Institute before architects or in the presence of the public.

Where lies the remedy? Certainly not in inaction or toleration. Whatever its faults or failings, the Institute is and must be the centre of English architecture. To weaken it by secession or abstention is to damage the general interests of the profession. The only course, it seems to me, is to join it in numbers sufficient to make the provincial element strong in proportion to its numbers; thus to make it truly national and representative. Then agitate for the right of voting by proxy until the right is forced from the unwilling Council, and then to 'Shape our ends, rough-hew them as they may.'"

HEALTH EXHIBITION HANDBOOK ON WATER SUPPLY.

Rather late in the day there made its appearance (just before the closing of the Exhibition) an important contribution to the series of Health Exhibition Handbooks, in the shape of a voluminous report on London Water Supply, by Sir Francis Bolton. It contains a vast amount of information placed before the public in an intelligible form, and divested of much of the technical phraseology so puzzling to the ordinary reader. It describes the various sources from which the water supply is drawn, and the modes in which it is distributed. The consumer will be able to learn from it the exact points from which the water he drinks is taken, the process which it undergoes before being discharged into the pipes which lead it to his own house, in regard to filtration and purification, its degree of hardness or softness, its chemical constituents, and its standard of purity. He will also learn how easily that purity may be interfered with by the ignorance or indifference of the builder and plumber who arranged and fixed the pipes in his house, or by the carelessness of himself and his servants in not looking to the cleanliness of his cistern. A paternal Government in the course of its legislation has also undertaken to teach him what arrangements to make and what to avoid; in fact, if every consumer of water will only condescend to follow out all the precepts which are inculcated in the regulations made under the Metropolis Water Act of 1871, he may rest assured that everything possible has been done to secure him and his family from falling victims to "moving organisms," or "morbific germs." With regard, however, to the vexed question of water purity, Sir Francis Bolton does not profess to pronounce a definite decision, preferring to let the various distinguished experts speak for themselves in the Reports of Dr. Frankland on the one hand, and of the Companies' professional examiners on the other. As these reports have already received considerable attention in the *Builder*, we do not propose to enter on their respective merits again, but merely to point out that in Chapter VI., which is devoted to the quality of water and water analysis, the reader will find the chief points laid down, from which he can form his own deductions as to the meaning of the term "organic impurity." In regard to that term, it is said "that not only is the amount present in filtered Thames water infinitesimal in actual quantity, but the Royal Commission on Water Supply recorded the distinct opinion that the presence of a small quantity of organic matter in drinking-water is not necessarilly prejudicial." On filtration as one means of remedying impurities in water, Sir Francis Bolton gives some interesting explanations not generally known. Until lately it has always been supposed that the action of filters was merely mechanical, and simply served to strain off such particles as were held in suspension; but it has been discovered that they play a more important part in the removal of chemical substances, as will be seen from the following description:—

"Decaying organic substances poured with the water into a filter-bed, are not merely arrested, but are rapidly decomposed and resolved into their elementary constituents, which again are promptly recombined in other forms. This chemical change is scientifically explained by the theory that every particle of sand is closely enveloped in a film of condensed air, and that the particles of organic matter being thus brought into close contact with a body of oxygen, undergo rapid decomposition. It is well known that all solid bodies attract about them an atmospheric film, and, therefore, as a bed of sand and gravel is an agglomeration of minute stones, each with its coating of compressed air (or, in other words, compressed oxygen and nitrogen), the water filtering through the interstices has to pass through a concentrated body of oxygen capable of rapidly decomposing it, and forming other compounds. . . . Following out this theory, it has been asserted by chemists that when some of the London companies drew their supplies from the tidal portion of the Thames where it received all the sewage of London, their filter-beds did not clog up nearly so fast as might have been expected. Scientific experiments showed that the filter-beds must have intercepted considerably more impurity than was actually found in them, and the phenomenon was explained by the theory that filtering was not merely a mechanical straining process, but one also of rapid chemical action, by which the polluting matter intercepted was destroyed and converted by oxidation." The process which takes place in the large filter-beds of the water companies goes on of course similarly in the small domestic filter, but just as it becomes necessary to renew the substances comprising the large filters, so is it necessary to cleanse the small ones, a precaution which householders ordinarily are not in the habit of taking, and consequently the very article on which they rely as a safeguard may, and often does, turn out just the opposite. No filter, therefore, can be depended upon *indefinitely* for the purification of water, for it "gets gradually choked up by the pollution which it is continually abstracting from the water passing through it, and the air coating upon which the chemical action depends becomes exhausted, and the oxidising process gradually ceases." It behoves every householder, therefore, to bestow especial attention to two points: first, to the periodical cleansing of his cistern, and next, to the renewal of his filters; as also to give heed to other important matters which are particularised in Chapter IV. The second part of the treatise is occupied with the history and description of the various London waterworks companies, with very complete statistical tables of their financial position. As similar information was embodied in Mr. Alfred Lass's Report, which was lately reviewed in our columns, it is unnecessary to say more than that all who are interested in these particulars, as well as in the legislative enactments under which the several companies raise their revenues, will find them all clearly detailed therein.

The description given in Appendix II. of the Water Pavilion, and of the way in which those marvellous effects were produced in the illuminated fountains, will doubtless be eagerly read and appreciated by thousands of those visitors to whom that part of the Exhibition proved a never-failing source of wonder and pleasure. For the small price of One Shilling they will find themselves initiated into what, until it is explained, appeared a veritable mystery of science, a marvel which led the beholder to imagine for the time being that he was under the spell of the genii whose wonder-working powers of magic formed so favourite a subject of description in Eastern lore.

East Dereham.—The parish church of St. Nicholas, East Dereham, is about to be restored, according to plans and specifications which were approved of at a vestry meeting held last week. The scheme of restoration, for which 3,000*l.* is required, includes the removal of the plaster ceiling over the nave, the renewal of this roof to its original state, and the removal of the galleries, which now obstruct some beautiful windows, especially in the north aisle. The architect for the restoration is Mr. E. Preston Willins, of Norwich.

MR. G. AITCHISON, A.R.A., ON THE PROSPECTS OF ARCHITECTURE.*

As I understand, there are certain conditions without which architecture, as an art, is impossible; there must be the laid-up wealth, much building on a large scale, and a taste,—nay, a passion,—for beauty, for sublimity, and magnificence, amongst the public; and there must be those conditions of law and custom that will not thwart the desires of the owner of the building. There must be the architects, honest, skilful, and inventive. I think we cannot doubt that the laid-up wealth exists, nor the need of buildings, some, at least, of large size, nor a sort of sluggish taste for work good of its kind; but I think we may safely say there is no overmastering passion in the public for architectural beauty or magnificence. There is, of course, discernment enough to know a good building from a bad one, but the inclination is rather to pick holes in the best building than to thank God that anything so beautiful could be made by man.

There are, however, laws and customs that, perhaps, do more than general apathy itself to check the development of the rising taste for beauty, for instance, "leasehold tenure." Who will build magnificently for some one else? Is it credible that any one will secure superb workmanship, the most enduring materials, and all the art that the best architect, sculptor, and painter can supply, if the building is to pass to a stranger at the end of sixty, eighty, or ninety-nine years? Besides, the freeholder will look to see that what his tenant wants to make his house perfectly fitted for himself is also fitted for after-tenants, even when he does not force upon his tenant some of his own views of propriety and beauty.

There is a fashion now for buying pictures, and an excellent fashion too, so far as it goes, but I fear it is not altogether separable from the idea, that if the pictures are skilfully chosen they are better investments than any known on the Stock Exchange: else why are there so few friezes, wall pictures, and mosaics, in buildings that are not leasehold? I merely mention this because it might otherwise seem that architecture had been outstripped in the race by the sister art. I am by no means sure that this is not the case; and if it be so, let us again draw up to the painters, and pass them if we can; no one objects to generous rivalry.

I ask, if painting be truly and honestly admired for its own sake, how it comes about that none of the pæans sung in its praise are sung in praise of our art? And why the architects who build more excellently than their fellows are not run after like the celebrated painters. On the whole we may say that the first half of the last 100 years was a very artless one. We escaped from perhaps a worse fate than once threatened Greece, but no temples rose, and few monuments recorded our thankfulness and our victory. When we had modestly housed the Duke, put up a bronze Achilles to his glory, named Waterloo-place, Waterloo Bridge, Waterloo-road, and Waterloo blue, our thankfulness and our enthusiasm expired.

If we compare the spirit of the Florentines in the thirteenth century, only just emerging from barbarism, and owning but one tiny city, determining that their new cathedral, St. Mary of the Blossoms, should exceed in magnificence any building that Greeks, Romans, or the proudest people of the earth had built, what a contrast they make with us, possessing an empire on which the sun never sets, but doubting whether we have enough courage, energy, and industry to keep what our fathers won for us, and when the supreme aim of the Government is to see if it cannot save three-halfpence off the architect's commission. So much for the public; now for ourselves. It would be as insulting as untrue to doubt the honesty of the generality of architects. I do not doubt that amongst the whole body of them there is much more skill than could have been found for a century or more, and it would be invidious to compare the individual excellence of living architects with the great who have passed away. We have reburnished the rusty armour, and weapons of antiquity and the Middle Ages are fairly skilful at the old fence, but I fear we lack the heart and the inventiveness of the old Paladins. No *coup de Jarnac* seems to be

* From a paper read before the Architectural Association on the 21st inst.

invented now. We bear too much resemblance to the men in armour at the Lord Mayor's show: the armour and weapons may be as good, and as bright as armour or weapons ever were, the men may be bigger and their thews as strong, but their hearts have not the ancient courage, nor their souls the same devotion; and even if the men were our modern Paladins, they would not fight in that armour, nor with those weapons. Do not fancy that I suppose that any man can evolve a style: there must be something to start from, and a multitude striving in the same direction, every one of that multitude anxious to solve the pressing problems of the day, and several generations to bring the new thoughts to anything like completeness; but what we all feel is the absence of the first step. You know Viollet-le-Duc's comparison of the architects to an opera chorus singing "Let us go," though they all stand still.

It may be that the grand gift of architectural invention is only to be found in what we call new races; barbarous races that have suddenly emerged from their homes, who find themselves conquerors, and face to face with a higher civilisation, and in the possession of unheard of wealth, such races as the Arabs and the Normans.

Amongst civilised nations, the Roman was the only one I know that slowly evolved a style. Unless one were a prophet, a necromancer, or whatever he be called, who can depict the probable development of past possibilities, it is impossible to say whether the Romans would have created a style of their own, could they have increased in wealth and civilisation without the subjugation of the known world. All we know is, they did not; they were born constructors, and had cultivated this native gift to great perfection even before they conquered Greece. The artistic excellence of Greek architecture dazzled their eyes and enslaved their minds; like ourselves, they wanted excellence ready-made, and would not wait for its growth, but they were too practical a people to give up their advanced system of construction for the primitive one of Greece. They were not artistic enough to apply at once Greek principles of beauty to their own new forms of construction, —the arch, the vault, and the dome. So apparently the art-architect was created. He stuck vulgarised imitations of Greek work on to Roman construction, and it was not till five or six centuries had elapsed that the Romans possessed a real style, one that ornamented their own native construction with appropriate forms. This style we now call the Byzantine.

The Greeks carried the old style of construction, — the post and lintel, — to the highest artistic perfection, and in a style differing from the Egyptian, Assyrian, or Indian; so a new system of construction is not necessary for a new style. The Romans having new constructive elements gradually learned how to clothe them in forms of beauty that neither hid nor belied constructive truth.

The Arabs,—for we call the conquered people by the name of their conquerors,—somewhat improved on Roman construction, and certainly clothed their construction with forms that were wholly new and original. One of the most striking features of Arab architecture is the stalactite or honeycomb work, and, if Owen Jones's assertion is to be believed, this was gradually evolved from the attempt at copying series of superposed eggs and tongues that took their fancy. Here, to say the least, is the one step forward from which came such wonderful results. Before we have analysed the elements of it, an Arab honeycombed dome does not seem to be the work of man's hand but to be the work of some superior being. Though I hope I may be wrong, I do not see this tendency towards development in modern architecture.

The Normans, with examples of Roman and Byzantine work at home, and with reminiscences of Syriac and Arab work abroad, gradually evolved a wholly new style. They, or some of the people they conquered, and animated with their resistless energy, developed the arch and vault to their uttermost perfection, and I think we may say they evolved and developed tracery.

If you think of the continuous invention implied in passing from columned and arched windows to the fantastic tracery of the Flamboyant, at first sight it seems that there was more invention then than now, perhaps because we can now see the transitions at a glance, though it really took four or five centuries to complete the development. Phases of plant growth, before overlooked or disregarded, took their fancy, and they piled the pyramid on the tower, and so gave what we suppose to be a novel aspect to buildings. At any rate, we know that the Christian cathedral is very different from the Pagan temple. Whether in the babel of architecture that now exists we are slowly evolving a new style, no one who lives in it can say. We must not forget the almost frenzied energy with which the English architects of fifty years ago threw themselves into Gothic, how perfectly they mastered its apparent intricacy, till a Mediæval, revisiting the earth, might believe he had come back to his own time again. This training, with the Roman Classic forms ingrained in the people and revived, points to a new style partaking of both elements.

All I can do is to point out to you what little observations I have made. You have often heard me say that I believe that what taste there is, that is not antiquarian, lies in the direction of simplicity, and as I am sometimes charged with paradox, — that is, saying that which though true is strange,—I will now explain my reasons. The old sailing-ship of my youth was of the uttermost complexity, with masts, yards, booms, and bowsprits, with shrouds, ropes, and dead-eyes, sails, and pennons, a sculptured figure-head, and carved stern, while that modern monster of the deep, —the ironclad,—is as simple, and black as a dolphin, with nothing but a funnel for its back fin. The old dinner-knife, curved like a scimitar, with its blobbed end to prevent stabbing and to eat peas with, its conical handle coloured green, and bossed with silver, has made way for the rectangular blade, in its oblong haft. The many-runged chair, ornamentally turned and fancifully carved, has been supplanted by one of four plain legs with two rounded uprights and a slightly curved top. I am not now speaking of art furniture. Every wheeled carriage that is turned out aims day by day at being more perfectly simple, and harness becomes less and less without a stitch or a rivet that is not for pure use. So much so, that the old wagons we sometimes see, all chamfered curiously, the horses' harness covered with jingling brass plates, pierced and engraved, and with ornamental stitching, remind one of Mediæval days. And what can be of sterner simplicity than the new carriage of our time,—the bicycle,—which, when bestridden, presents us with the centaur of the nineteenth century. Take these observations for what they are worth: to me they point to simplicity of taste. We have two absolutely new materials, —iron and cement concrete,—and both these materials almost force us back to the pure post-and-lintel construction of the early days of our race. The use of iron should, at least, be marked in some way; but hitherto we have adopted the Roman plan. The girders with their vaults are covered up with a false ceiling in imitation of wood framework; and we cannot as yet be said to have turned ironwork to much æsthetic use. Of ornament we have no lack: does it point to anything in the heavens above, the earth beneath, or the waters under the earth, that the cultivated man of the nineteenth century cares for? We have our sacred animals, those devoted to sport,—the fox, the roebuck, the red-deer, the pheasant, the partridge, the grouse, the woodcock, the trout, and the salmon. Do we ever see one of these put on a house because the owner is a hunter, a sportsman, or a fly-fisher? Do we see domestic pets,—a cat, a dog, a canary, or a squirrel,—carved on a house? Though there was one squirrel immortalised by figuring in the centre of each drawing-room frieze of a speculative builder's row of houses. This squirrel would "have cracked his nuts in liberty" had not both been of plaster. Lions' heads we see by scores because the Egyptians, Greeks, and Romans liked them; nay, I have seen bullocks' heads on a Bank, but I took that for the architect's monogram.

There are two emblems that the modern architect has taken under his especial protection, the stone cannon-ball and the flower-pot, and these are now receiving their apotheosis. The flower-pot I think I understand, but why the cannon-ball? Figure sculpture of this century we cannot have; our dress is too ignoble to be represented in any lasting material of one colour, and this is a terrible misfortune, for the bulk of mankind care for nothing but the present. The architect, like the poet, is born, and not made; though when either is born he takes a good deal of making; but in one respect the architect is more like the soldier than the poet, for after he has endured his training, and learned his drill, it is from the teaching of the actual strife that great generals and great architects are formed. Since the incubation of the Renaissance it is curious to note how few great architects there have been who have not measured some of the celebrated ruins of antiquity, at least of those who have succeeded in making fine monumental buildings.

The close communion with antique greatness seems in some measure to impart that greatness to those fitted to receive it. So, few great modern poets have not been classical scholars; those grand exceptions, — Shakspeare and Burns,—were not unconscious of this misfortune, and repaired it by studying the antique master-pieces at second-hand.

Drawing is doubtless a great art; not only does it enable us to show completely and brilliantly what we mean to do, but the training to eye and hand is invaluable, and we can mostly distinguish between the works of the architects who can draw, and those who cannot; and if we cannot, the architect who is a brilliant draughtsman can, for he sees the improvised turns that the mere art of drawing suggests: still this brilliant achievement is being carried in the present day beyond its legitimate end, or rather, I should say, it is made too much of to the exclusion of more important things; though it helps us by forcing us to observe, and reveals to us some of the causes of excellence in buildings, though it enables us to have a useful gallery at hand for our study, though it commands immediate recognition, some flattery, and frequent success. It is scarcely studying architecture, and is too apt to draw us away from more tedious studies, such as measuring fine examples and calculating their proportions, studies more necessary for our education, and which are apt to call down on us the contempt of our friends and the gibes of painters, though the end of these studies is to increase our knowledge, and to enable us to acquire that skill which is the peculiarity of the architect as distinct from the builder, the engineer, the draughtsman, or the designer. Paradox as it may seem, architectural invention is not the one distinguishing characteristic of the architect. His distinguishing characteristic is the knowing how buildings and their details will look at the height and distance at which they are to be seen; and this can only be learned by actual practice, if it be not learned by the measurement of existing buildings. Pheidias was a monumental sculptor, and in the competition for the pediment of the Parthenon his work was judged to be the worst; but he insisted that as the sculpture was to be in a pediment, not on the ground, it must be seen at the proper height, and when this was done, his was seen to be the best.

Mr. Ruskin, after one of his brilliant descriptions of an atmospheric effect on a distant hill, argues *à priori* on the probabilities of what the substance was which produced that effect, whether it was marble, ice, snow, or gold. He then walked up the hill, and found it to be caused by a wood of pine trees, and expatiates on the strangeness of the material chosen by Nature to produce such an effect. This is just our case. We have sketched something in a building which we consider successful, and are surprised when we try to produce a similar effect that our work is a failure. It is so because we have used the ice or gold instead of the pine wood. When you learn to draw freehand learn figure drawing, for not only does the padding out of the ghastly bones with the necessary flesh give lessons of how the purely necessary can be clothed with beauty, but the figure gives the best lessons in form, and the exquisite refinements that Nature resorts to, and it also teaches us the comparatively small difference between the curves that make beauty and those which make ugliness.

One form of wisdom, however, consists in proportioning our efforts to the task we have to do and the time and strength at our disposal, and it is not wise to make our plan so vast that we shall have neither time nor materials to rear the building.

The three great divisions of architecture are: arrangement, construction, and beauty; each division is transcendental, and no man that ever lived could say he had perfectly mastered one of these subjects. Construction alone has of

late years been raised into a profession, and no engineer could say that he had mastered it, and yet we have in that profession men of special, and extraordinary ability, who have devoted their whole time to its study, who have won by it fame, titles, and fortune. And though M. C. Garnier's joke is not quite true that engineers are only architects who have not finished their education; yet to gain the name of architect we must combine in some degree all three. That this combination, with extraordinary excellence in each branch, has not been beyond the powers of some giants who have added to it sculpture, painting, and poetry, is a reason why giants should not despair. All I say is, let us be sure we are good architects before we become painters, sculptors, and poets, and let us not lose the substance for the shadow. To aim at everything and to do nothing well is not, in my opinion, to win self-respect, not even fame.

Some of you may recollect Martial's epigram on Attalus, who did everything prettily :—

"He that doth nothing well all prettily
A very idle-busy-man must be."

No country, however, wants the aid of the real architectural sculptor so much as England. And if your taste leads you to abandon architecture, and become an accomplished architectural sculptor, every wise architect will hail you with delight. I may also mention incidentally that France has almost the monopoly of architectural illustration, the whole world is supplied by her, at least when the books are illustrated with fine steel engravings. Here at least is an opportunity for the highly skilled architectural draughtsman, for France only has this monopoly by reason of her superior industry and skill.

We may say that geometry is the mother of architecture, yet how few study it. Read Prof. Willis's paper on "Stonecutting in the Middle Ages," and see the great acquaintance there was then with it.*

In the Arab writings, when a town or a palace is to be built, the king sends for the geometricians and mathematicians, and those mysterious and intricate interlaced patterns, the real arabesques, are founded on pure geometry. Proportion is the soul of architecture, though every style gets some of its flavour from a tendency to some particular proportion.

The Reform Club is, I think, the most perfectly-proportioned building that has been built in Europe since the Italian Renaissance, and the story goes that Sir Charles Barry had the proportions of every celebrated Italian palace taken out, and took a mean for the club.

We know from Vitruvius that the Greeks had established a canon for proportioning their works, which the Roman architects imitated. We try to extract from old buildings the secret of their success, and we can in some cases obtain their proportions; but those proportions must be applied to some definite form, and it is just this definite form that we lack.

Like the fever-tossed patient, we try to get rest and ease by constant turning. We in this century have tried Greek, Egyptian, Italian; every period of English Mediæval from Norman to Tudor; Italian, French, and Flemish Gothic, Elizabethan, and the Dutch Renaissance; but no sooner have we mastered the style, and in some cases long before we have mastered it, than we abandon it for something else. This passion for change prevents us from exercising that power of modification on any style which might make it suit our wants and likings.

Our friendly but grumbling critic, Mr. Fergusson, has written high praise of us in his "Modern Architecture":—"As a body, the architects of this country have never been so numerous, so well instructed, nor so earnest in the exercise of their vocation as at present." Yet he is always insisting on his text that "modern architects do not think, they only copy,"—a saying seized on with pleasure by the ignorant multitude, but *we* know how far it is from being the case. I dare say we think as much as architects ever thought, and copy less. I think that if you compare the buildings of one style that have been done in the last thirty years, and take thirty years either of genuine Gothic or Renaissance, you will see that the modifications of the latter are not much more than the former; although in the former case these buildings of one style have mainly been the production of a small band of architects only, while the latter were of the whole body. I shall show hereafter the absurdity of supposing that a new style perfected in every part, and precisely adapted to present use, can issue from the brain of any one architect like the armed Minerva from Jupiter's. Every architecture we know has gradually proceeded from the small modifications each age has made; and that, too, at times when more attention was paid to architecture than has been the case for the last century, when men's thoughts have been occupied with the discovery of the powers of nature and the invention of machines to utilise those powers. We must, at least, begin by modifying or paraphrasing some known style or by applying the mouldings and parts of something we do not know to the rectangular brick box with holes in it.

If this paraphrasing of by-gone styles were confined to England alone it would not so much matter, because then we should know it resulted from idleness or natural incapacity, but it extends to civilised man. France, Belgium, Switzerland, Italy, Germany, Austria, America, and Australia have nothing absolutely new to offer, so it is clear that neither race, climate, nor language can affect architecture; the defect must lie in the present civilisation.

I am inclined to believe, in spite of Dr. Johnson, that "Poets are but the tailors of other men's thoughts," and that which is true of poets is true of all artists. They are the men pre-eminently gifted with the spirit of their age, and blessed with the power of expression. If, then, the people of their time are heroic, you have heroic poetry; if the passions run riot you have passionate lyrics; if causticity and sarcasm prevail you have satire; but if the people have nothing poetical about them, the poet is driven to old themes. If the people are fat and shapeless they afford no scope for the sculptor; be they ever so beautifully made and in ever so fine a condition they will be useless to the sculptor if they wrap themselves in ugly garments that conceal their shape, and sculptors must revert to antiquity or die out. If the public care not for grace, dignity, or elegance in their habitations or public buildings architecture dies, and dies more completely out than any other art. Poets may sing, painters may paint, and sculptors model, but it is a rare case when an architect could afford to build even the Reform Club House for his sole use and delight.

If the public desires some sort of grace, dignity, or elegance, but does not much care what, and has no particular liking, as we have no style of our own an old style is paraphrased till the public are tired of it, and then another style is paraphrased; in short, architecture, like the other fine arts, closely portrays the spirit of its age.

Some ancient nations called themselves "Autochthones," or sprung from the soil, and if the story of the Doric temple is true, that it was suggested by the native wooden hut of Greece, the Doric temple may be said to have sprung from the soil, and after centuries of gradual perfecting, culminated in the Parthenon. We know that the Romans with building, but as we suppose without architecture, tried to imitate that of the Greeks, and after five, six, or seven centuries created Byzantine; we know that the Normans copied as well as they could Roman and Byzantine buildings, and when touched by Arab art during the course of five or six centuries began and ended Gothic. The wave of Classic feeling that passed over Europe, at first only wetted, as it were, the surface of things: the buildings remained Gothic, but with a savour of Classic, the mouldings, ornaments, and sculpture only were of Classic inspiration. Architecture then became as purely Roman as it could, and gradually losing all vitality, again made way for revived Greek and for revived Gothic. Many variations of Classic and Gothic have been introduced and practised, not to speak of flavours imported from Arabic, Moorish, Hindoo, Indo-Arabic, Chinese, and Japanese sources.

It is the easiest thing possible to imagine the throwing away of all former thoughts, traditions, and knowledge, the arrangement of buildings on purely rational principles with new and splendid effects, the whole clothed in new and beautiful proportions, adorned with new mouldings and ornament absolutely different from the past, and with figure-sculpture and painting animated by a new spirit, and that this combined perfection shall excite the admiration of the multitude, and satisfy the fastidious taste of the cultivated. The only objection to this charming vision is that nothing of the sort has ever yet occurred in the history of our race. We should hear of African savages, who had heard nothing but the tom-tom, writing operas that surpassed those of Rossini or of Wagner; or North American Indians, who had seen nothing but a wigwam, erecting temples that surpassed the Parthenon or Notre Dame de Paris.

This visionary scheme was once put in practice. Brunel and Sir Digby Wyatt agreed to do the interior of the Great Western Railway on this principle. Brunel found the construction, Sir Digby the art; and every moulding was to be brand new, and no ornament was to be used as ornament, but only where necessity demanded it. You have the monument now before you of what one clever man can do.

It is admitted that without the Iliad we should not have had the Æneid, nor the Divina Commedia without the latter: yet each had the flavour of its time.

The Gothic foliated cap is a Mediæval paraphrase of the Corinthian capital; the stellar vaulting is but the outcome of the Roman groin. We adapt our buildings to our present wants, and use the iron construction of to-day to meet our needs; and it is only when we seek to give our buildings the æsthetic flavour of the age that we fail, and I think the solution is that there is no æsthetic flavour in the age to give; the public are just affected with the slight flutterings of taste, and are beginning to think they ought to have something more sightly than the old brick box of their youth, with holes in it for doors and windows.

The twelfth century was the incubating period of Gothic; and it is quite possible that the nineteenth may be that of a new style; we have not only been gathering specimens of architecture, and architectural art from all parts of the world, but different architects, or groups of architects, have more or less assimilated the spirit of each. Let but the people of England, or of Europe, of America, or of Australia have some definite taste and desire, the creative genius arise, and all this apparent chaos may form itself into an organised shape, embodying the sum of all the art and charms that characterise each one, and proceeding to develope itself in as logical a way as Gothic did.

Maybe we have been making a bed of leaf mould,—with leaves, too, from every part of the earth,—from which the new tree may spring. Although I am no prophet, it seems not so unlikely that this so-called Queen Anne's style may be the germ from which the tree is to spring, adapting itself to the outline, and freedom of Gothic with the Classic detail,—and when I say Classic, I mean excellent. Even now it does not refuse alliance with the best sculpture and painting that this age affords, as Gothic does.

The first thing wanted is for you to train and drill yourselves, and when the power of expression is attained, to observe the temper of the age, and to work out the style which will suit that temper, and seize on the budding aspirations of the age. My own notion is, that this will be found to be perfectly proportioned and graceful simplicity, almost free from ornament, but enriched with the finest sculpture and figure pictures that the age can afford. When you have done this, you want to convert the nation, if the nation will then require any conversion. For if a national taste arise, you, as a part of the nation, must be imbued with its spirit, and be sure that, if you can give tongue to that aspiration, the pack will follow you. Probably there is no profession requiring so much study, so poorly paid; so the architect works mainly for reputation and for fame.

Besides the hints about study that I have dropped in the course of this lecture, I want to direct your attention to the claims your art has on every age, in every nation. It is at least a lasting record of that age's taste and temper. From the durability of its works it to some extent supplies the want of those more brilliant and lasting records, eloquence and poetry. The illiterate nations of the past would be as last year's snow were it not for their architecture, and its enshrinement of the cognate arts. Let us suppose that the ancient Egyptians had contented themselves with houses, tombs, temples, and palaces of reeds and Nile mud, with all their glory and achievements, they would be as utterly gone from human remembrance as the men who built the lake dwellings. We know

* Transactions of R.I.B.A., vol. i., part 2. On the Construction of the Vaults of the Middle Ages, by R. Willis, M.A.

that Egypt must have been great, because we see how vast, sumptuous, and artistic are its structures, while its sculptures tell of achievements in war and peace. When we consider the power of our art to endue buildings with sublimity, grace, elegance, beauty, or even with appropriate gloom or horror,—when we consider that our art is enshrined in buildings of vast size and of long endurance,—when we consider, too, that they reflect the character of the age in which they are built,—I cannot for a moment doubt that architecture is worth living for, although I must admit that we are at this moment beset with so many depressing influences that it is not surprising that some of us are tempted to despair,—to throw aside our high aspirations, and to see if we cannot win in the race for fortune when we have lightened ourselves by throwing away the desire for fame. But I say, despair not; black and tempestuous as may be the sea on which you are about to venture, let your courage and endurance rise superior to the danger, and some of you at least will weather the storm. I believe that no good piece of work is ever thrown away, but, even if you can do no more, you will help to hand down the tradition of your art unimpaired to happier times and more sunshiny days.

Master the art of architectural expression, master construction and arrangement, master a cultivated style, and then set yourselves to really adapt it to present requirements. Cut off all the redundancies, all that is not called for by actual needs, either practical or æsthetic; recollect, too, that iron must enter even more largely than at present into every building that is not of the most modest size. Consider that though the bones of the mammal are ghastly they are hidden, and that the bones of the crustaceans are outside. Nothing, for instance, can be more elegant in treatment than the shell of the king crab. Mountains, rivers, rocks, and forests all abound in lessons for the architect. Every leaf and every plant may give him inspiration for a form, a moulding, or an ornament.

Reputation, honours, and fortune are the prime movers of the second-class spirits of the world; and if we do not wish mankind to relapse into sloth and barbarism, we should do what we can to uphold these incitements to exertion, and not let the envious, the dull, and the brutish abolish them, in the hope that when all are reduced to the condition of swine, they will be indistinguishable from the rest of the herd. Higher motives, however, have actuated the noblest of our race; men of brilliant genius and overwhelming power have devoted themselves to the good of the world, of their country, or their creed, for no greater meed than bare subsistence and a sense of duty. It is this spirit that I want you to adopt; perfect yourselves in your art, and then preach a crusade against the apathy and tastelessness of our age, and so confer on your country and your art a benefit of incalculable value. Did I not think this reward coupled with the feeling of having done one's duty was so much higher than any other, I might have pointed out the cases when pious monks, with no aims but the improvement of mankind, have ended their lives as popes.

In the course of the discussion which followed, The Chairman (Mr. Cole A. Adams, President), said he was glad that Mr. Aitchison, speaking from his long experience, had laid such stress upon the subject of drawing and its relation to architecture. One could not help also being struck with the wisdom of the remarks upon the little progress made by architecture in this country through the deadening operation of the law of leasehold tenure.

Mr. Stannus agreed with what had been said about pictures being bought as investments. He knew instances of City men who had almost the acuteness and judgment of an Agnew for buying pictures, and who, after holding them for a few years, had realised more than 5 per cent. per annum (on the money thus invested) by their sale. At the same time one could not help feeling that the diversion of capital from ordinary mercantile pursuits led to an abnormal development of picture-making, while preventing outlay upon architecture. With regard to the disappointment often resulting from the attempt to reproduce some feature which looked well from a mere sketch, he believed the old men did much of their designing *in situ*. The architect in those days was merely a superior kind of workman, and as the detail was wanted, he sketched it on a board with chalk or charcoal. Designing *in situ* was the grandest form of training any young fellow could have. The modern tendency for simplification was a hopeful sign. It was as if they were throwing over, bit by bit, the worthless portions of the cargo, so that the good ship *Architecture* might weather the storm. An eloquent writer on architecture had termed these the "trimmings," and they were what Mr. Aitchison had said should be thrown overboard. The great desire of the age seemed to be for classification, and in the case of architecture it would enable people to distinguish the evanescent from that which was eternally true. Mr. Aitchison had referred to new materials, and one of those with which his name had been associated was iron, which had never had a fair trial. The whole paper was really an inspiration to younger men. He concluded by moving a vote of thanks to the writer.

Mr. Hilton Nash seconded the vote, adding that it was a pleasure to the members to hear such an elevating paper. He believed that leasehold tenure only existed to any great extent in the South of England. They all deplored the rows of rotten and ugly houses in and around the neighbourhood of London.

Mr. Aitchison, in returning thanks, said that the prospects of architecture seemed very hopeless, and that was what he meant by the "black and tempestuous sea" they were venturing upon. Nothing could be more damping to the spirit than the idea that one's client did not care whether his house was good, bad, or indifferent, and every effort should be made to remedy this state of things. As to iron, it was a material which was pressing itself forward for the use of mankind, and it would enter more and more largely into buildings as time went on. With regard to style, this would not be invented by one man, but by a gradual concentration of the capacities and tastes of men working in general concurrence with the thoughts of others.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

THE opening meeting of the present Session, 1884-85, was held on the 19th inst., Mr. Thomas Morgan in the chair. Mr. H. Rolfe, C.E., sent some interesting drawings showing the construction of the piers of the Roman bridge recently discovered in the bed of the River Trent during the works of widening and deepening the navigable channel. Two of the piers were found, strongly framed, there being a solid plate from end to end in the centre of each pier, from which lateral timbers extended to take the uprights of the roadway. It is supposed that five other piers remain embedded in the river. The spaces between the timbers of the piers were packed with freestone, similar to Ancaster stone. Mr. Loftus Brock, F.S.A., exhibited, by permission of the Rector of Westbere, Kent, a large number of fragments of stained glass of the fourteenth century, recently found in the Rectory-house, where they were deposited many years ago during the repair of the church. They will be replaced in one of the windows. Mr. C. Roach Smith, F.S.A., sent a paper on a remarkable oppidum of ancient British date on Hayling Island. It is surrounded by deep ditches, some of which are still filled with water. The site is a strong one, and, although the existence of a large earthwork is known in the locality, but little attention appears to have been given to it, and its extreme antiquity does not appear to have hitherto been recognised. A paper was then read by Mr. C. H. Compton on the Roman bridge found in the Trent.

Builders' Clerks' Benevolent Institution. A special general meeting of the donors and subscribers was held at the offices of the Institution, 21, New Bridge-street, Blackfriars, on Tuesday, the 25th inst., on which occasion Edith A. M. Friend was elected by show of hands to succeed to the benefits of the orphan fund, in place of Ethel M. Jeffreys, whose school term will expire at Christmas. At the close of the proceedings a vote of thanks was presented to Mr. Joseph Randall, the president (who was supported by Messrs. E. Brooks, treasurer, J. Robson, E. C. Roe, E. Graystone, and other gentlemen). Mr. Randall, in reply, expressed the pleasure it had afforded him to assist in the work of so good an institution.

Illustrations.

MONUMENT IN WESTMINSTER ABBEY

TO THE LATE REV. LORD JOHN THYNNE.

WE give an engraving of this monument, which is in the north choir aisle of Westminster Abbey. The subject of it, the Rev. Lord John Thynne, was for fifty years Canon and for forty-six years Sub-Dean of Westminster. Mr. Armstead, the sculptor of the figure, writes: "During the last sixteen years I knew him well, and have tried to represent the aged priest peacefully at rest, his long day's work done, clothed in the elaborately ornamented cope which he wore when officiating at her Majesty's coronation. The reindeer, at his feet, is the family crest."

The architectural portion of the monument, like that to Dean Stanley which we illustrated a few weeks ago, is designed by Mr. Pearson, the architect to the Dean and Chapter.

THE LADY CHAPEL: TREVES CATHEDRAL.

THERE are very few churches north of the Alps which retain so much undoubted Roman work about them as does the Cathedral of Treves. Tradition asserts that it was erected by St. Helena, mother of Constantine. It was, however, almost rebuilt in the sixth century, largely added to at the commencement of the eleventh century: vaulted, and the choir enlarged, in the thirteenth century. Of the earliest building traces are still visible in the vast capitals, built into the walls of the transept, which appear to have supported the "crossing" of the church, and the brick arches visible in the walls of the choir aisles, especially that which forms the "Lady Chapel." Our illustration represents the south choir aisle of the cathedral at Treves, and shows some of the old Roman brickwork, together with additions of the eleventh and thirteenth centuries. The curious gallery to the left is a very singular example of Romanesque work; if, as there seems every reason to suppose, it was erected as an organ-loft, it is a remarkably early example of that feature. The screen at the back of the altar is also curious; it is of late Romanesque work, and consists of a series of stone panels, enclosing small slabs of black marble. The altar is an elegant specimen of late German Renaissance work, and presents a handsome appearance from its being entirely constructed of marble.

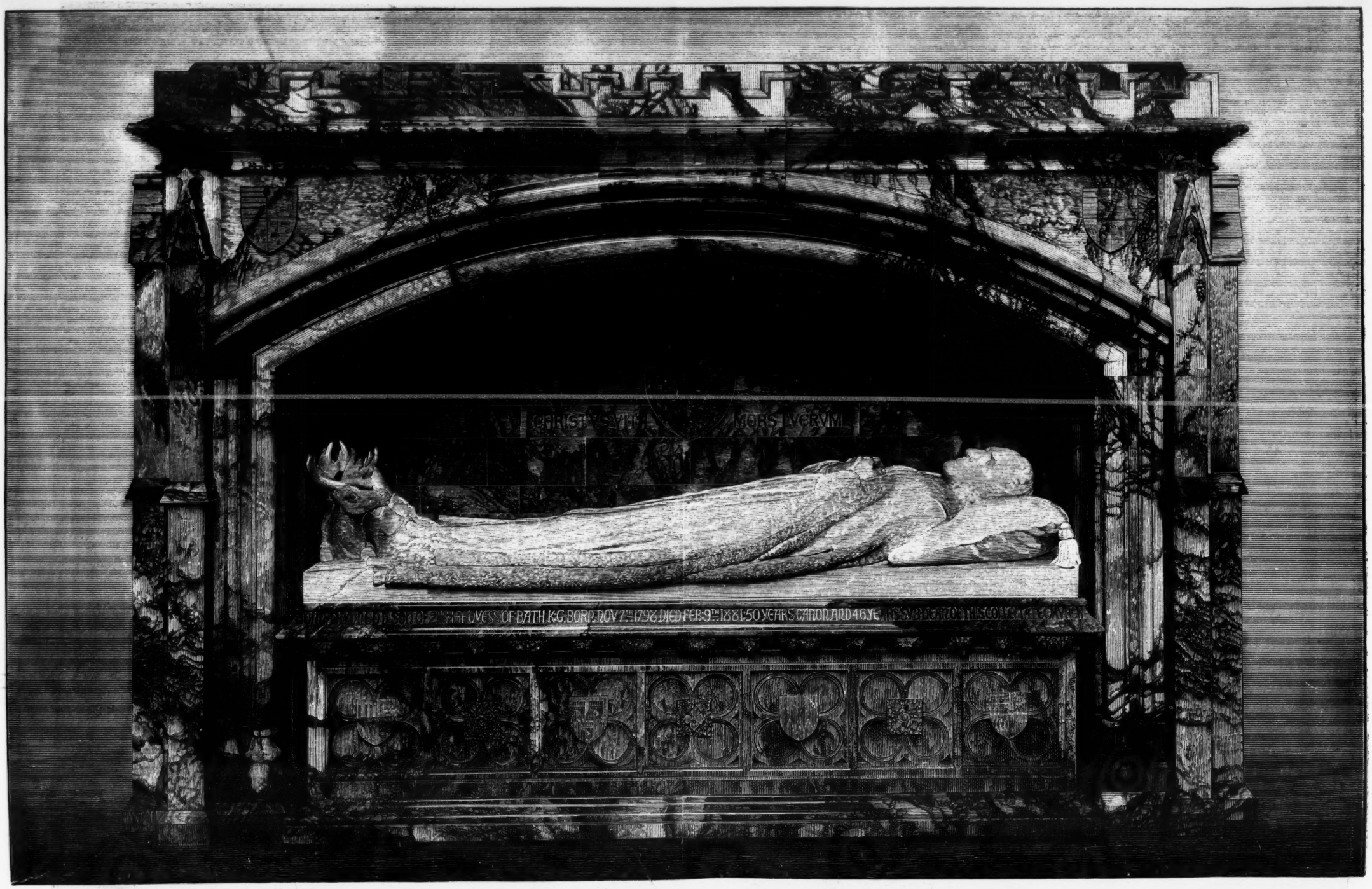
DESIGN FOR WAR AND ADMIRALTY OFFICES.

BY MR. WATERHOUSE, A.R.A.

WE give this week the design and the principal plans made by Mr. Waterhouse for the first competition for the Law Courts. A comparison of the plans with some of those which were selected from the final competition, will not be without interest, and perhaps instruction. We append Mr. Waterhouse's rpeort in full:—

"*Central Court.*—The accompanying design has been so arranged that every important room looks either into the spacious central quadrangle, or outwards into St. James's Park, or the surrounding streets. Besides this central quadrangle (rather larger than that in the Foreign Office, it being 258 ft. by 175 ft.), are two smaller ones, each divided by a block of closets, lavatories, &c., which do not rise so high as the main buildings, so that in no case does any business room get its direct light at a steeper angle than one of 45 degrees with its window-sill, unless it be a few of the lower windows looking south into the courtyard of the Horse Guards. In the majority of cases the angle of incidence gives an amount of light very greatly in excess of this. In fact, owing to the nature of the site, the great problem of how adequately to light so great a building seems to admit of unusually easy solution. No room has less than 10 square feet of window area to every 100 square feet of floor space. In most cases much more is given, the average being 14 ft. per 100 ft. As a rule I have placed the windows 16 ft. 6 in. from centre to centre, so as to make the small rooms 23 ft. by 15 ft. 4 in., giving an area of 350 ft. of floor space; and the larger rooms 32 ft. by 23 ft., or about double that area.

Iron Construction avoided.—Wherever possible, I have carried up the walls continuously

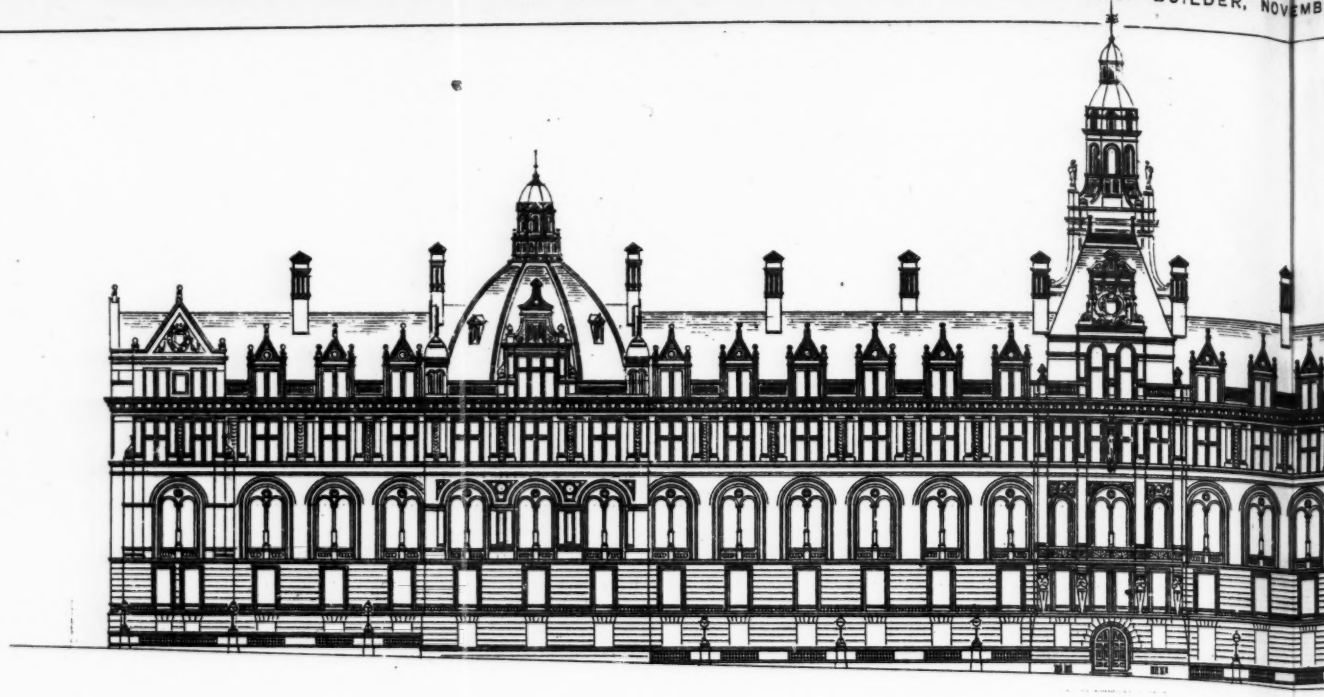


MONUMENT TO THE REV. LORD JOHN THYNNE, WESTMINSTER ABBEY.

MR. H. H. ARMSTEAD, R.A., SCULPTOR; MR. J. L. PEARSON, R.A., ARCHITECT.

THE LADY CHAPEL, TREVES CATHEDRAL.

MR. H. H. ARMSTEAD, R.A., SCULPTOR, MR. J. L. PEARSON, R.A., ARCHITECT.



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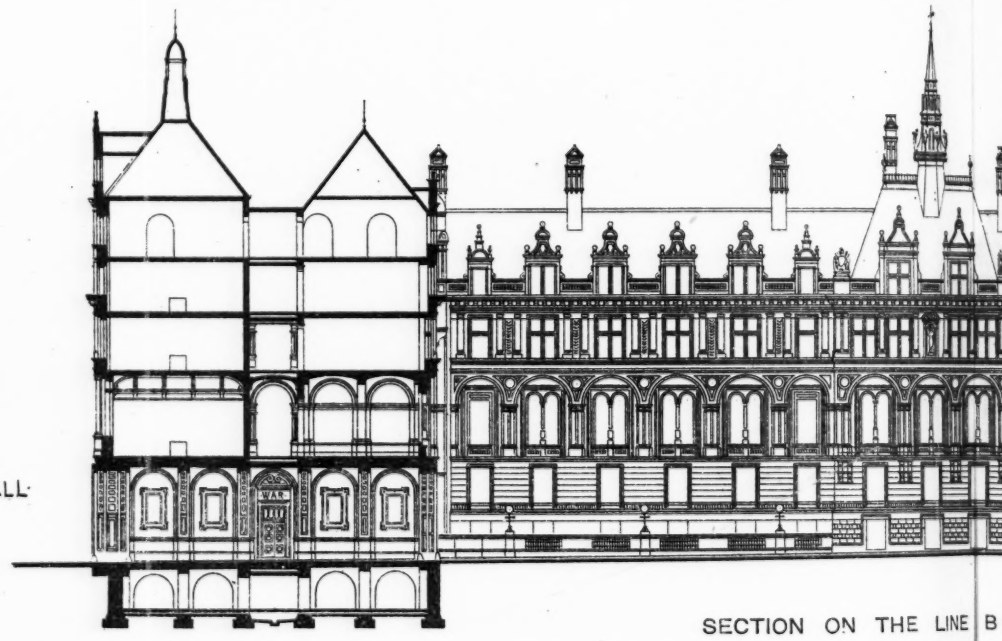
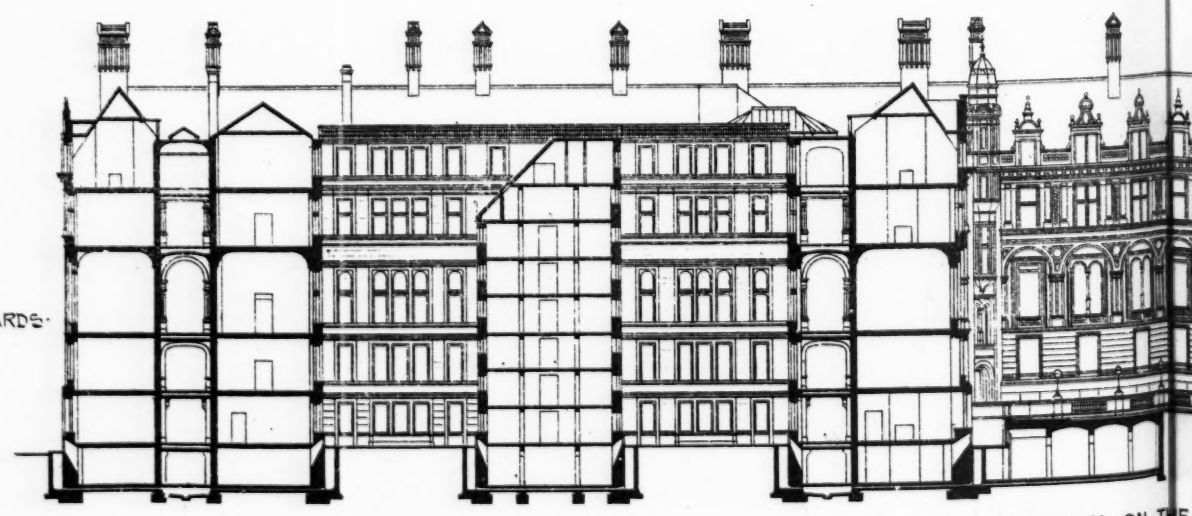


WHITEHALL.

SECTION ON THE LINE B

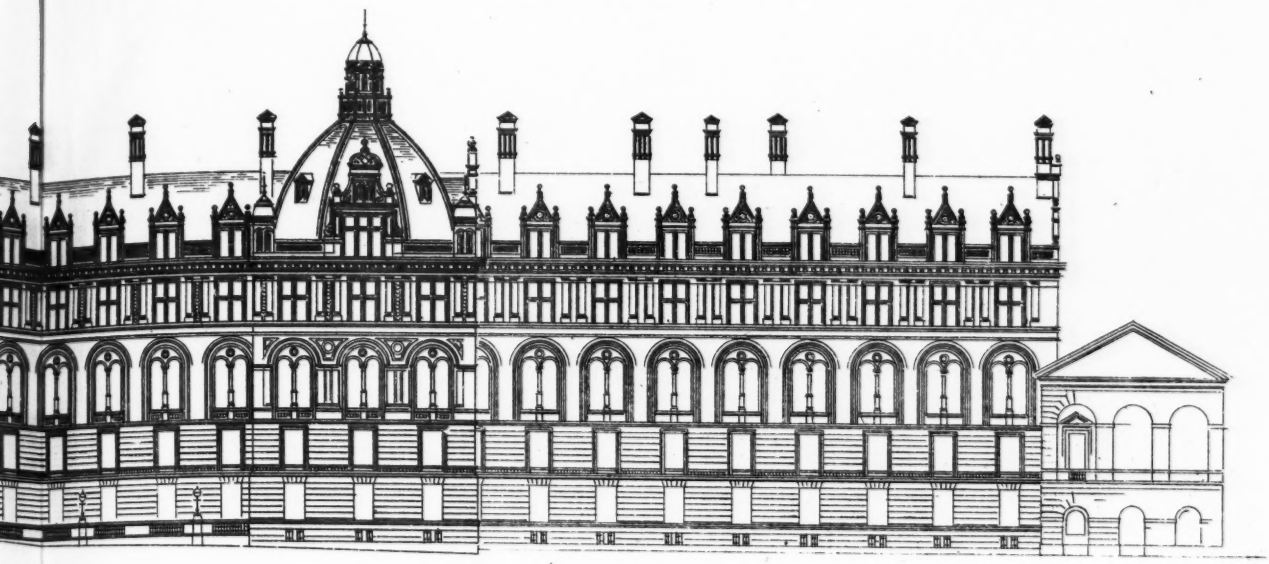


HORSE GUARDS.

SECTION ON THE

Wyman & Sons, Photo-Litho

PROPOSED NEW ADMIRALTY AND WAR OFFICES: DESIGN



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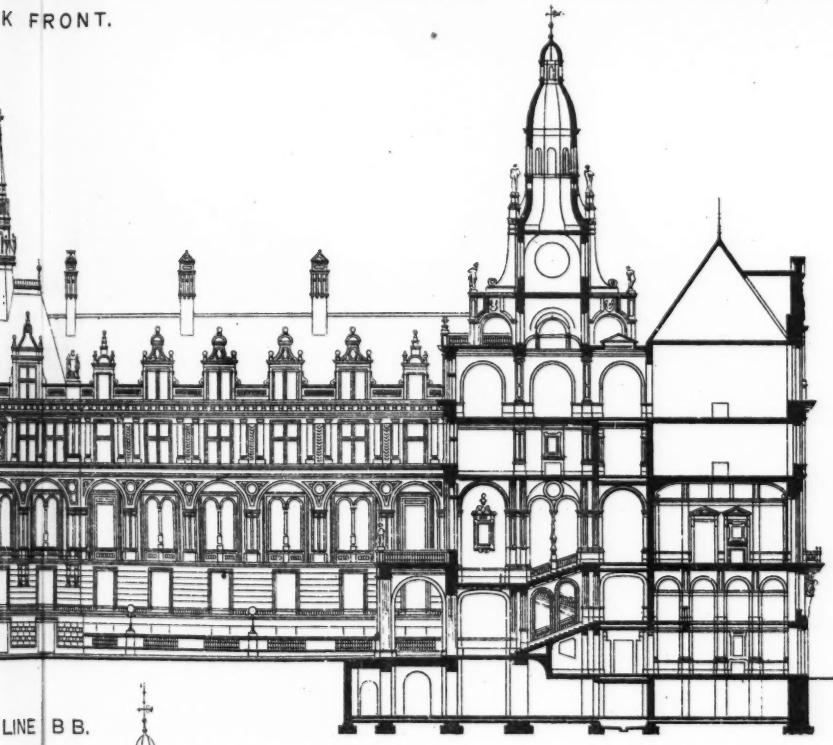
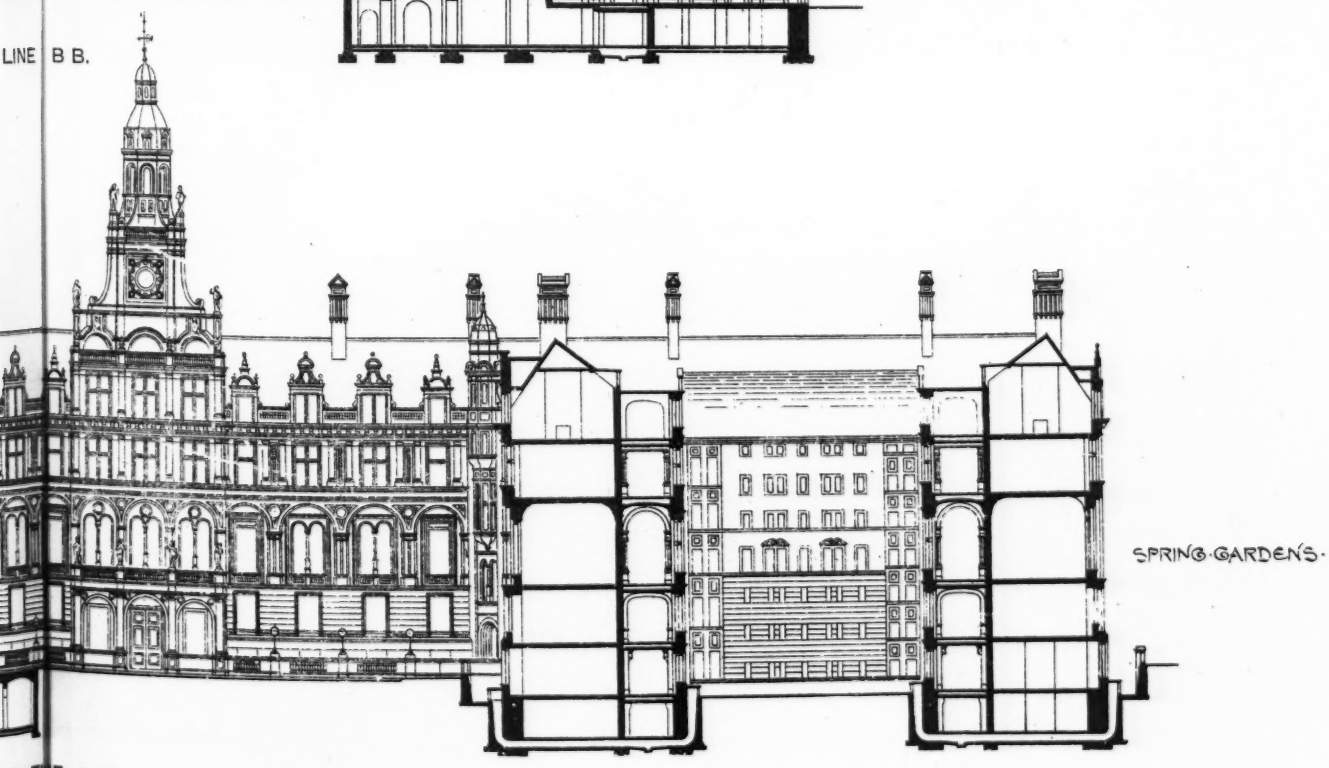


THE·PARK·

LINE B B.



SPRING·GARDENS·

ON THE LINE A A.

: DESIGN SUBMITTED IN FIRST COMPETITION BY MR. A. WATERHOUSE, A.R.A.

C. Queen St. London. W.C.

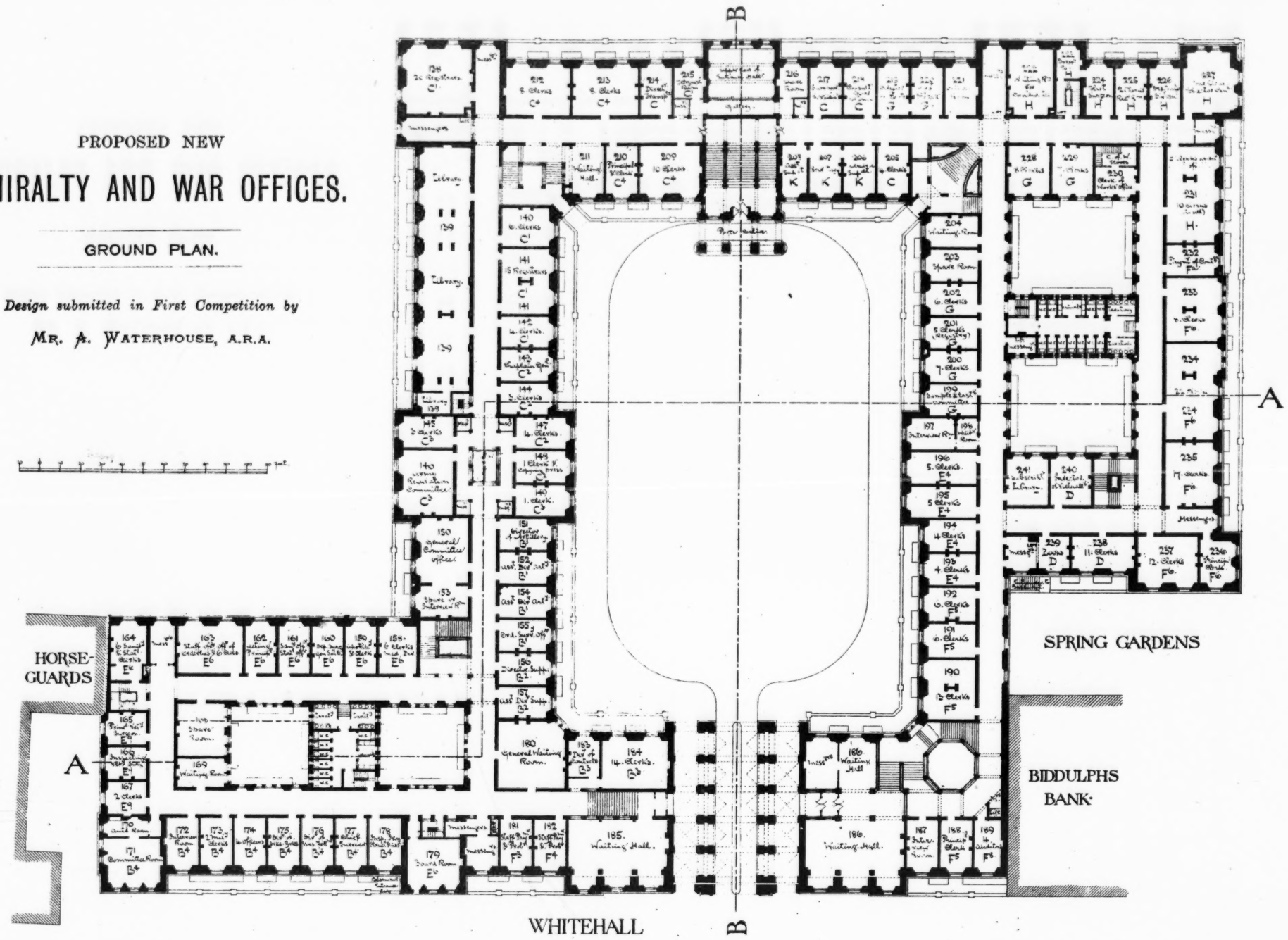
PROPOSED NEW

ADMIRALTY AND WAR OFFICES.

GROUND PLAN.

Design submitted in First Competition by

MR. A. WATERHOUSE, A.R.A.



Wyman & Sons, Photo Litho

Gt Queen St London, W.C.

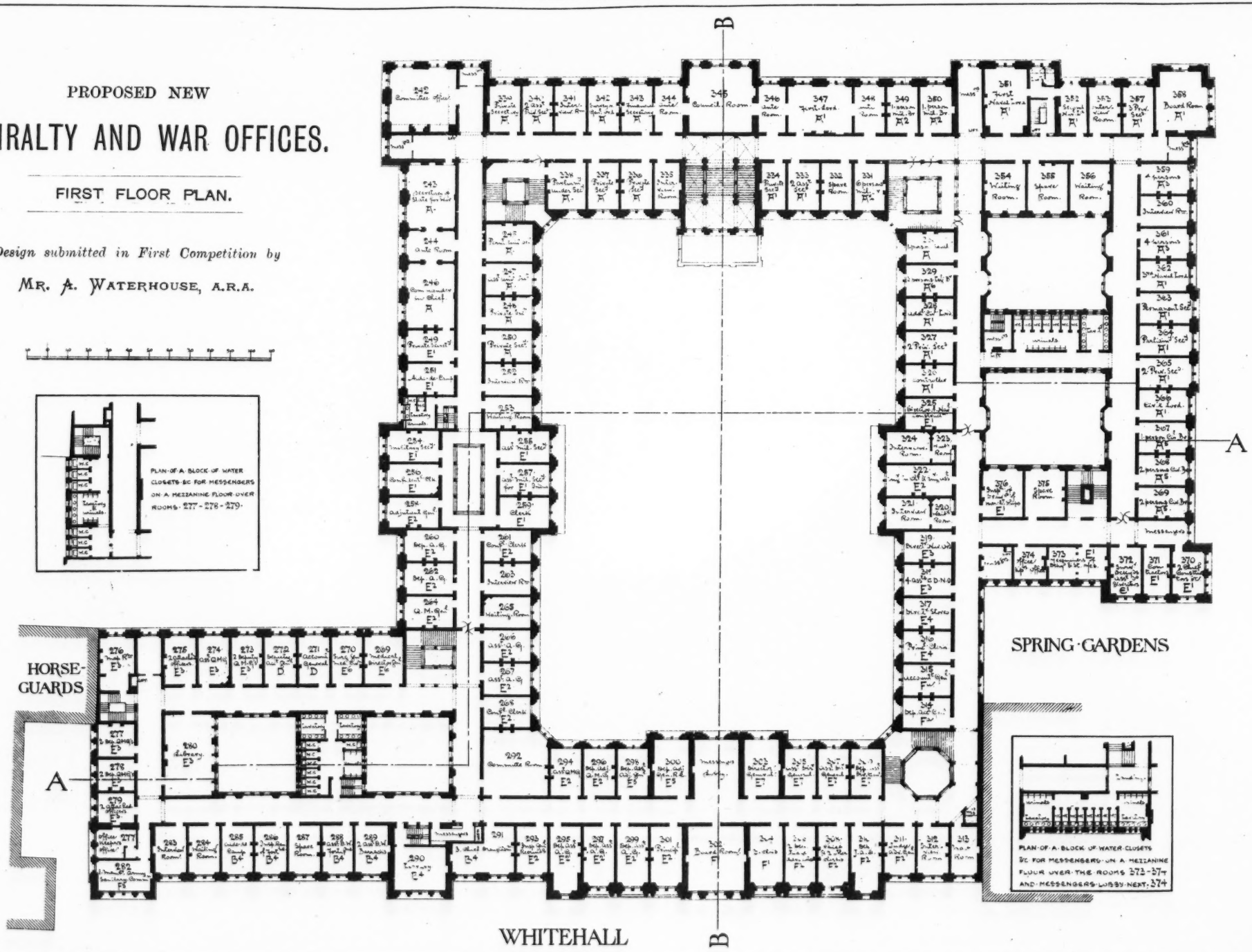
PROPOSED NEW

ADMIRALTY AND WAR OFFICES.

FIRST FLOOR PLAN.

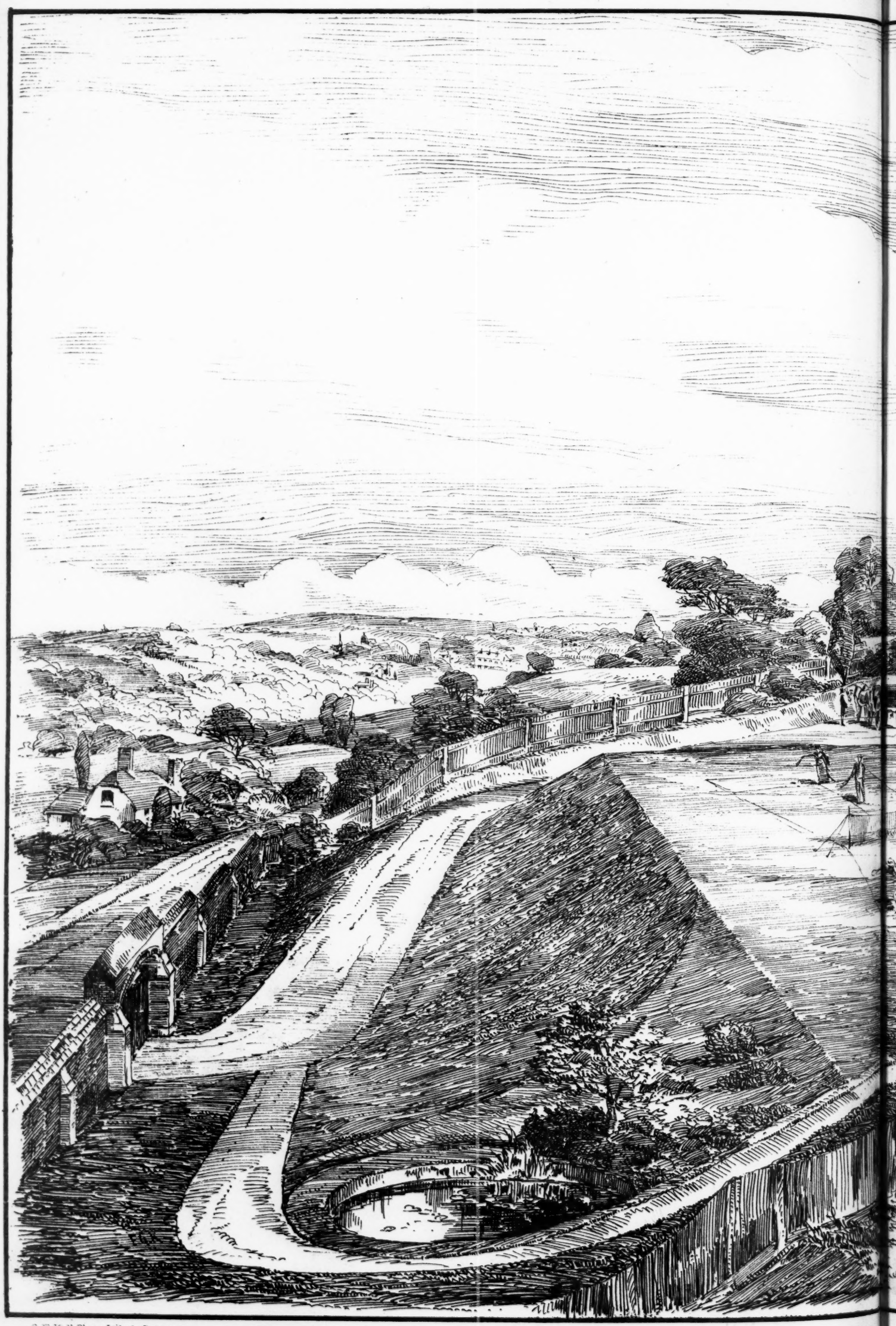
Design submitted in First Competition by

MR. A. WATERHOUSE, A.R.A.

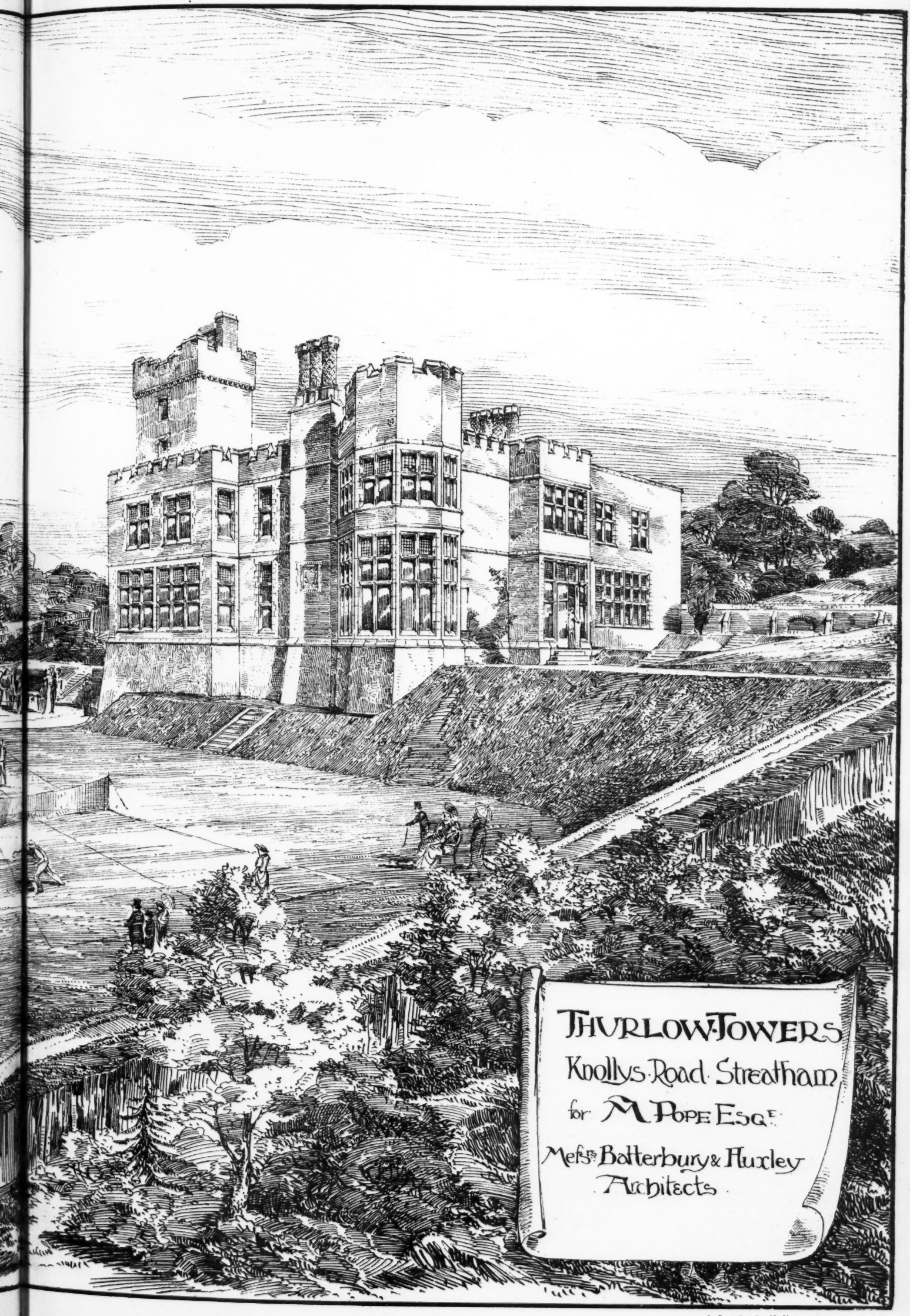

B
A
HORSE-GUARDS
SPRING GARDENS
WHITEHALL
PLAN OF A BLOCK OF WATER CLOSETS &c FOR MESSENGERS ON A MEZZANINE FLOOR OVER THE ROOMS 372 - 374 AND MESSENGERS LOBBY NEXT 374

Wyman & Sons, Photo-Litho.

Gt Queen St London, W.C.



C. F. Kell Photo-Lith & Printer


THURLOW TOWERS
Knollys Road Streatham
for M POPE ESQ.E
Messrs Batterbury & Huxley
Architects

from foundations to roof to avoid the introduction of much constructive ironwork. I am aware that consequently my design is placed at some disadvantage, from the areas of some of its rooms not exactly agreeing with those suggested in the schedules. I hope, however, that will be considered a less evil than the free introduction of walls on girders, especially as the deviations have been almost always to give more than the prescribed amount of space. At the same time, there can be no difficulty in adopting a more elastic arrangement of division walls if desired;—the space is there.

Corridors.—The corridors, 12 ft. wide, are on plan as simple and as straight as possible, without any needless angles, so as to ensure ease in finding any particular office, and expedition in going from one to another. There are only eight lengths of corridor in the entire building, and they are lighted in a varied way, so as to destroy what would otherwise be their somewhat weary monotony. The light comes either from the ends of the corridors, or from side windows looking into the smaller courtyards; sometimes, however, it comes across staircases, or down from above, the corridors being in such case carried around the well, with an arcade between. In this way I believe well-lighted, ventilated, and cheerful corridors have been secured.

Staircases.—The staircases are placed so as best to serve the departments which are necessarily put on more than one floor. Most of them are 8 ft. wide, and all have steps 12 in. by 6 in., or easier. In every case winding steps have been avoided.

Number of Stories.—In order to secure the maximum amount of light and air (to which I considered the great internal square would conduce) it has been necessary to devote five stories almost exclusively to the occupied rooms enumerated in the "schedules," and to put the repositories principally in a sub-basement story which can be kept perfectly dry by means of a through draught of air carried everywhere under the building, and be lighted from the surrounding areas. In the case of the Admiralty two thirds of department F, and the general repository of E are placed above the third floor. The basement story is surrounded by an area 6 ft. wide, and from its general elevation above the ground almost attains to the dignity of an ordinary ground-floor.

The different stories are in height, from floor to floor, as follows:—Basement, 13 ft.; ground-floor, 14 ft.; first floor, 21 ft.; second floor, 14 ft.; third floor, 13 ft. (to ceiling).

Main Entrance.—The main entrance from Whitehall consists of a double carriageway under a single arch leading into the centre of the great court. On either side are separate arches for footways. These arches are 10 ft. 6 in. wide, and the central one 20 ft. Opposite the visitor at the west end of the great court, and under a clock-tower of modest dimensions, is a *porte cochère* leading to a State entrance common to both Admiralty and War Office.

Business Entrances.—The principal business entrances, however, are under the vaulted arches of the carriageway out of Whitehall, that of the War Office being on the south, that of the Admiralty on the north, and facing each other. This is in order to give the quickest route from the street to any particular office. The entrance opens at once in each case into a cheerful waiting-hall, with messengers' rooms adjacent, and staircase leading to every floor in the building. Passenger-lifts to the different floors are at hand in each case. Other business entrances at the south-western and north-western corners of the great court would probably draw off traffic from the corridors in fine weather.

State Entrance.—The State entrance leads to the foot of the grand staircase, the central flight of which is 13 ft. wide, and is divided by a double arcade of glazed majolica from the side flights, which are each 8 ft. wide. This State entrance directly communicates, by means of a spacious hall, with a private entrance from the Park, to be used,—like the State entrance and staircase,—only by the heads of departments. The staircase terminates on the level of the first floor by giving access to the central council-chamber overlooking the Park. This council-chamber, not in the schedule, is intended to be common to both the great departments for which the building is devoted; the Lords of the Admiralty having their rooms to the north of it, overlooking the Park; while the Secretary of State, the Commander-in-Chief, and the heads of the War Office, are to the south, likewise looking on to the Park.

Privacy.—Care has been taken to prevent through traffic along the first floor corridor leading to the principal apartments. The public staircases at the north-western and south-western corners are arranged to pass up from the ground to the second and upper floors without in any way interfering with the privacy of the corridor on the first floor. In like manner the corridor on the ground-floor is diverted on to a balcony overhanging the Park entrance-hall in order to take the public clear of the State staircase.

Arrangement of Departments.—The arrangement of the different departments will be easily understood from the plans. Each department is kept as compact as possible, and its rooms, if on different floors, are connected by frequent staircases and paper lifts. The living-rooms are placed on the basement or third floor stories. There are private and tradesmen's entrances to these rooms from Whitehall and Spring Gardens. In the neighbourhood of these entrances are the refreshment-rooms and kitchens. These, however, can be placed on the third floor if preferred.

Fireproof Construction.—The whole of the floors are "fireproof," the rolled iron joists being in all cases totally encased in cement concrete to lessen the chance of injury in case of fire.

Heating and Ventilation.—Should circumstances favour the northern portion of the building being first erected, I should propose to warm it by low-pressure steam, the heating surfaces consisting of wrought-iron flanged pipes in channels under the whole width of each corridor. Fresh air, warmed thus in winter, but cold in summer, would be driven along these channels by fans worked by electro-motors, which would be driven by an engine receiving its motive power from the heating boilers. From the fresh-air channels under corridors, upcast flues would be carried into each room, the amount of heat and air supplied being under control by regulators, and the vitiated air passing out through flues near the ceiling of each room. The boilers and engine (which I have placed near Spring Gardens for convenient supply of fuel and removal of ashes) would be available for any motive power required for other purposes. Should the southern portion of the building be the first erected, the heating apparatus could be removed to that side of the building, or two heating centres could be arranged instead of one.

Retiring-rooms.—The closets, 101 in all, are placed principally in two blocks in the centre of the smaller courts. In order to supply these courts with abundance of fresh air, wide channels are brought to them under the building from each side; so as to prevent stagnation of air in the lower parts of the courts. The messengers' closets are in a mezzanine story between the first and second floors, and in retired positions. There are also some extra closets on the fourth floor. In certain exceptional cases, near the rooms of the chief of a department, an occasional closet has been introduced, but I consider this undesirable as a rule.

The Style.—The style adopted will, I think, admit of abundance of light, and at the same time be in harmony with the surroundings of the building. I had at one time hoped that these great Government offices would have afforded an opportunity of realising to a certain extent the magnificent dream of Inigo Jones in his design for the Palace in Whitehall; but a glance at the schedule of requirements with its 500 or 600 rooms of small size made it apparent that if they were kept of proper height for comfort and due regard to economy of construction, it was impossible to have in the new Admiralty and War Office such grandeur of proportion as exists in the Banqueting House opposite; and that a building of five important floors, each with windows of good dimensions placed at the proper distance from ceiling and floor, could not be forced into a dress suited only for two floors and an unimportant basement. A glance at the diagrams showing three bays of the Banqueting House, three bays of the Home and Colonial Office (the other most important building in the neighbourhood), and three bays of my own design, will explain my meaning better than words can do.

I have resisted the great temptation which the style adopted offers to introduce deep arcades in front of my windows, feeling sure that in our climate such aids to darkness, however beautiful in themselves, should be very sparingly introduced.

Materials suggested.—The material for the exterior I propose should be Portland stone, as the most durable stone which can be used in London, and as harmonising more with the architecture of the neighbourhood than any other material; though I believe that terra-cotta might be employed with advantage, both as to durability and economy. Internally I should be disposed to recommend glazed terra-cotta in the walls of the staircases and principal corridors.

Cubic Contents and Cost.—The cubic contents of my building, from 10 ft. below the basement floor to half way up the roofs, including all high roofs and other exceptional features, amounts to 10,191,641 ft., or from 15 ft. below the basement floor (as I think my design ought to be measured), 10,757,615 ft. I estimate its cost from the lower level at 543,880*l.* This price is less than such work would have cost some years ago; but not less than recent contracts warrant if the work be proceeded with at present prices.

Divided Contents and Cost.—The Admiralty and War Office interlock to a certain extent in my design, on the different floors. This occurs on the upper floors above the main entrance, and very slightly near the State staircase. Should it be desired to make each department entirely self-contained, so as to build one before the other, it will be easy to completely divide them by a vertical line drawn from foundation to roof at the walls south of rooms 344, 335, 300, and 301 on the first floor, giving the Admiralty everything north of this. The slight rearrangement thus involved would cause a loss of spare rooms to the extent of about 1,500 square feet on the part of the Admiralty; but would increase the spare accommodation of the War Office to a similar extent.

The contents of the Admiralty measuring from 15 ft. below the basement floor, would thus be 5,628,927 cubic feet, and its estimated cost 284,646*l.*; whereas the cubic contents of the War Office would be 5,128,688 ft., and its estimated cost 259,234*l.*

Amount of Accommodation.—In almost every department a substantial increase in the amount of accommodation has been given over and above the areas specified. Thus, to the Admiralty has been allotted 111,334 square feet of 'carpet space,' against 102,830 specified in the 'schedules,' besides 27,565 square feet devoted to residences and miscellaneous accommodation (given in the instructions, but not in the schedules), and 24,520 square feet more in interview, waiting, and spare rooms; while to the War Office has been given 122,339 square feet, against 110,470 specified in schedules, besides 26,689 square feet devoted to residences and miscellaneous accommodation, and 26,662 square feet more in interview, waiting, and spare rooms.

These figures, with 6,150 square feet of accommodation, common to both War Office and Admiralty, give a total for the whole building of 344,259 square feet, exclusive of corridors, messengers' rooms, and retiring-rooms.

Owing to the small scale of the drawings, I have contented myself by merely showing the building in geometric outline, leaving the scheme for such decoration as appears to me to be compatible with its objects to the further development which my design would undergo, should it be so fortunate as to obtain a place in the select competition."

Key to References on Plans.

THE WAR OFFICE.

A. Staff.
B. Surveyor-General's Department.
  B 1. Director of Artillery.
  B 2. ,, Supplies.
  B 3. ,, Contracts.
  B 4. Inspector-General of Fortifications.
C. Central (or Secretary of State's) Department.
  C 1. ,, ,, ,,
  C 2. ,, ,, ,,
  C 3. ,, ,, ,,
  C 4. ,, ,, ,,
D. Finance Department.
  D 1. Finance Department.
  D 2. Auditors.
E. Military Department.
  E 1. Military Secretary.
  E 2. Adjutant-General and Quartermaster-General.
  E 3. Intelligence Department.
  E 4. Deputy Adjutant-General R.A.
  E 5. Deputy Adjutant-General R.E.
  E 6. Army Medical Department.
  E 7. Military Education Department.

E 8. Commissary-General's Department.
E 9. Principal Veterinary Surgeon's Department.
F. Miscellaneous.
F 1. Army Purchase Commission.
F 2. Judge Advocate General.
F 3. Pay Office. Commissariat and Transport and Ordnance Store Corps.
F 4. Pay Office. Army Hospital Corps.
F 5. Army Sanitary Committee.

THE ADMIRALTY.

A. Board-room Suite and Secretary's Department.
A 1. Board-room Suite.
A 2. Military Branch.
A 3. Intelligence Branch.
A 4. Naval Branch.
A 5. Civil Branch.
A 6. Legal Branch.
A 7. Registry Branch.
A 8. Record Office Branch.
A 9. Copying Branch.
B. Hydrographer's Department.
C. Transport Department.
D. Victualling Department.
E. Controller's Department.
E 1. Director of Naval Construction.
E 2. Engineer-in-Chief.
E 3. Director of Naval Ordnance.
E 4. Store Branch.
E 5. Dockyard, Ship, Gunnery, and Registry and Copying Branches.
F. Accountant-General's Department.
F 1. First Division.
F 2. Second Division.
F 3. Third Division.
F 4. Fourth Division.
F 5. Fifth Division.
F 6. Sixth Division.
F 7. Greenwich Hospital Division.
F 8. Auditors.
G. Director of Contracts Department.
H. Director of Medical Department.
J. Director of Works Department.
K. Naval Reserves Department.
L. Royal Marines Department.
M. Inspector of Naval Schools Department.

THURLOW TOWERS, STREATHAM.

We published last week a view and plan of this house, with a description. We give the present view, drawn by Mr. Knight, as an admirable example of free pen-drawing of building combined with landscape, which we believe our readers will be glad to possess for its artistic value.

THE TOWER OF LONDON AND WESTMINSTER HALL.

Sir,—The "Member of the Architectural Association" [p. 709, *ante*] has not shaken the self-evident proposition that I endeavoured to lay down in your issue of the 8th instant to the effect that true architecture consists in knowing what you want, and doing it.

There is no need to see the drawings of the intended restoration,—or restored completion,—of Westminster Hall for the purposes of this argument, much as I should enjoy the intellectual treat of seeing such expert knowledge displayed *on paper*.

The amount of study that your correspondent has devoted to the subject merely shows that there does not exist in this case the only excuse for completing an ancient building according to its original intention,—namely, the fact that the actual design has been preserved.

Cologne Cathedral is a rare instance of this, and the public are always informed of the fact by the guides to that magnificent, but comparatively uninteresting, building.

The instance of Westminster Abbey, quoted by your correspondent, most clearly bears out my argument.

First, we read that there was a Saxon church.

Then that Edward the Confessor *wanted a better one*, "Monasterium est dirutum ut surgeret nobilius" (Scott's "Gleanings," p. 67), and that he built it in the *then modern style*.

Then that Henry III. *wanted a better church still* than the Confessor's, although that must have been a peculiarly sacred one: so he started it by building that most beautiful choir and *chevet*, to which the well-known words might be adapted, "the glory of England and the shame of the rest of the world": and we see that it is designed in the *then modern style*.

Then Edward I., who was probably satisfied, as well he might be, with the form and dimensions of this beginning, *wanted to extend it*, and he did so, using the *then modern details*.

Then Henry V. *wanted to rebuild the nave*, in doing which nothing was to be gained by altering the above-named form and dimensions, and he did so, using the *then modern details*.

Then Henry VII. *wanted a mortuary chapel*, and he actually pulled down Henry III.'s lady-chapel (Scott's "Gleanings," p. 53), and built an utterly different one in the *then modern style*.

Then *western towers were wanted*, and Sir Christopher Wren, who appreciated Gothic work sufficiently to make a harmonious group, proportioned them to the Abbey, using the *then modern details*.

I might add that *we want a central flèche*, and hope that the eminent architect in charge of the Abbey may add one as well proportioned to it as the western towers, and as recognisable in date as the Early Renaissance *flèche* that surmounts the Early Gothic cathedral of Amiens.

So much for the history of the Abbey. Now, your correspondent justifies the present proposal to *complete* Westminster Hall, according to Richard II.'s design, by comparing the case with Henry V.'s nave of the Abbey. Surely, if the rage for restoration had set in at the time, Henry V. would have pulled down the comparatively recent choir and transept in order to *complete Edward the Confessor's design!* For the nave of that church then extended, we are told, as far west as the present one, so that he had as much to go upon as we have in Westminster Hall.

On the contrary, he built a *new* nave suited to his wants, while the Office of Works propose to restore a bygone building *for the sake of restored completion*. This is what I have ventured to call a fatal mistake.

Your correspondent calls this expression a "generality." It is, to my mind, a fixed principle, and I speak from over twenty years' practical experience of work on old churches, and know that there are several ways of making new work tell its own story, such as the use of distinct forms and details or of different materials, without disturbing the harmony of the entire building. When replacing any missing portion, it is a safe rule to draw a rigid line at the word "probable." For instance, there can be no harm in filling up a shabby gap in an otherwise perfect moulding,—so long as the gap does not tell some valuable story, such as the insertion of a bygone rood-loft,—but, if a feature has disappeared entirely, however *probable* its former shape may be, it is, to my mind, an architectural "taradiddle" to put the shrewdest guess into stone *for the sake of restoration*.

No one can deny the evidence of his eyes as to the disappearance of Richard II.'s outbuildings between the flying buttresses of Westminster Hall,—they are, therefore, past "preserving for our study and admiration." Whatever scattered signs and vestiges there may be left of their bygone forms, surely, for us, the first thing to consider is *what is now wanted*, and to build that, and nothing else, under the direction of the architect in charge of the building, whose eye may be safely trusted to produce no discord from the rest of this noble monument.

Your correspondent, like many other people, shudders at the mere mention of modern architecture, and singles out certain buildings that do not please his taste. There is, alas! no safer way of raising a laugh than by a long string of sparkling abuse of modern buildings and practice. I am sure that such criticism might be directed into nobler channels by seeking out the good points of our art at the present day, and seeing whether *these* cannot be strung together into a recognisable style. A paper on this subject might be profitably discussed at the Institute, but that the numerous diagrams necessary for illustrating it might never travel further than the pages of the Proceedings, and their usefulness be thus limited.

If I may be allowed to speak of one so much my senior as Mr. Butterfield, I would say that there is no actual precedent for most of his work, which commands our admiration for its fearless originality, and free use of modern improvements; and yet I believe that no man has a deeper respect for old work and for every link in its history.

It is this very respect that should prevent us from forging,—in either sense,—Mediæval links at the present day, when it is impossible and undesirable to Mediævalise ourselves as well, in order to complete the completion of such buildings as the Tower of London and Westminster Hall. Modern appliances must surround these sham antiquities, and one is tempted to reverse the picture and to imagine a real Mediæval soldier or citizen waking up, after a sleep of centuries, to find himself confronted, in one of these restored buildings, with all the surroundings of modern life,—a subject ludicrous enough for one of Mr. Gilbert's plays or of M. du Maurier's drawings in *Punch*.

In spite of the Society for the Protection of Ancient Buildings, on the one hand, who piteously cry, "Don't alter your churches for more decent worship, but leave them alone for us to sketch and moon over, and treat in other secular ways," and of the restorers, on the other hand, who say, "Don't pretend to have any architecture of your own, but give us the past over again," I believe that architecture is alive again, and that common sense will prevail.

I have endeavoured to comprise my views on the subject in this somewhat lengthy letter, in order not to inflict myself again on your readers' patience, but to leave the matter in abler hands for further discussion.

EDWARD J. TARVER.

P.S.—If the Government *want a restored completion* of Westminster Hall, there must be thousands of taxpayers who *don't want to pay for it*.

Sir,—Your correspondent, "A Member of the Architectural Association," is trying to set up an analogy between the nave of Westminster Abbey and the proposed work on the west side of Westminster Hall.

The nave of the Abbey was carried westward upon lines already laid down, and differs in all its details from the eastern end. The elevation of each bay, and the section of the building, follows the work to which it is attached, but pretends in no way to be a "restoration." The building was also constructed to be of use. What your correspondent chooses to call the *completion* of the hall is set forth officially as a "restoration." The spectator is to believe that he sees the building as it may have been in the time of Richard II.

The details are carefully copied from work of the period, and so far as deception can be carried out it is intended that it shall be done.

This is not done for use. The purpose to which the rooms can be assigned is not yet decided.

First make your fanciful restoration, and then see what you can use it for. JONES.

A SYNDICATE OF TASTE.

Sir,—Two competitions for the sculpture to crown the four pedestals of the approaches to Blackfriars Bridge have already fallen through; three and four and many more may possibly share a similar fate. That the worthy and hospitable citizens of London have some notion that such competitions may possibly be expensive to the competitors is shown by their vote of compensation; nevertheless, they do not seem to be in the slightest degree aware that there can be no possible compensation to a sculptor for the loss of an important commission which has been permitted to be gazetted as awarded to him. There is generally something unsatisfactory in all the attempts to adorn the metropolis with sculpture, for the determination of such matters is generally committed to men who are, practically, unacquainted with art. Would it not be advisable therefore, to institute a Syndicate of Taste, to which all art questions of public import should be referred,—a syndicate composed of professional men, painters, sculptors, and architects,—a recognised public Institution whose members should be paid? This syndicate should be held responsible for the selection of the proper kind of design for a purpose, and of the best talent for carrying it out. This syndicate should in all cases, as a first step towards the embellishment of any spot in the metropolis, invite suggestions; for non-professionals are very frequently capable of offering very good ones, and the public should feel that the determining of the right kind of art for any position is a matter of national importance. Besides, the question as to the fit adornment for any position should be talked out and decided before "taking thought" as to the selection of the artist for carrying out the work. The three kinds of memorial upon which the changes are commonly rung are those of bust, equestrian statue, and statue. Surely there is something more novel to be thought of than that of placing equestrian statues on the four colossal pedestals of Blackfriars Bridge, like four troopers on outpost duty. The four piers present splendid opportunities for the realisation of four grand sculptural compositions,—for four groups of sculpture which should be distinctive features of the great City of London. Ought such opportunities to be thrown away upon commonplace notions?

Should not the profession, as a body, regard the embellishment of four such remarkably prominent positions as a common cause; should

they not combine to determine the right kind of design for such positions, and also co-operate in order to carry out such works to a successful issue? W. Cave Thomas.

"ARAB ART."

Sir,—I should not ask for space to comment on the article on Arab Art in your last number, [p. 684] dealing with a lecture I lately delivered, had not the writer misunderstood me and been thus led into unconscious error.

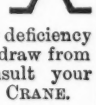
I was careful in my lecture to specify that the ceilings of Cairo houses are of wood, not of plaster, and I might have added that the domestic architecture of that city is not to be confused with the mosque architecture in the reckless use of plaster for decoration. I did not urge the introduction of Arab art into England, but the study of its principles. Copies come to no good end. Principles produce results worth the having. I deny, however, the unsuitableness of a Cairo room to modern needs in our climate, as I know two artists, Mr. Frank Dillon and Mr. James Wild, to have built rooms of this kind as working studios.

If your able contributor is content with the houses we are, in his forcible words, compelled to live in, I can only compare him to the old prisoner who, in his release, begged to be returned to his cell in the Bastille. I preach a noble discontent with a domestic art, defended only on the plea of necessity, a plea in art invalid. Reginald Stuart Poole.

British Museum, November 26, 1884.

"SMELL FROM KITCHENERS."

Sir,—A simple and thoroughly reliable method, which I always adopt, is to fix in the top register plate a short conical pipe, with a cap over, to prevent any soot falling through on to the hot plate, thus:—



Mind, this only applies to the kitchen, and assumes all the upstair rooms to be properly *ventilated*. Should there be any deficiency in this particular, they would probably draw from the kitchen: hence the smell. Consult your architect. Robt. Crane.

Sir,—I should imagine from "Kitchener's" letter [p. 710, *ante*] that his house above basement line is devoid of proper ventilation. Consequently, on the landing-door being opened, there is an upward rush of air, bringing with it all the fumes from kitchen, &c. If this is so, nothing done in the kitchen would, of itself, be of any use.

The remedy seems to me to be the proper ventilation of the house above basement-line, and independently of basement, and then treating the kitchen, &c., locally by providing an exhaust flue or flues, taken into kitchen-flue or elsewhere, as the case will admit. This plan, skilfully carried out, would, I am positive, give satisfaction.

I have seen good effects resulting from hoods fixed as suggested, but with the addition of a valve for preventing back-draught; but I think kitchens can be ventilated better without them, and they are so ugly. Hoods are very well for fried-fish shops, where the process of cooking is confined to a place immediately under them; but in kitchens one as often sees steaming vessels on the various tables and sideboards as on or near the stove itself.

J. Kemsley.

Sir,—"Kitchener" asks for a remedy to prevent the smell of cooking finding its way all over the house. I have had many years' varied experience in such matters, but have not yet come into possession of a panacea; for I have generally found it necessary to take the diagnosis of each case, and treat it accordingly.

Now I will suggest that your correspondent first turns his attention to the kitchen chimney. Is there a thorough good draught? It may be that the chimney is not high enough, or is not of sufficient capacity all through.

Let him have two conical ventilators fixed in the register over the kitchener leading into the chimney. The bottoms of each should be about 12 in. or 14 in. in diameter, and fixed flush to the register. The tops should project into the chimney about 12 in. or 14 in., and should be about 3 in. in diameter, with an arrangement for closing when desired. Also see that the ovens are ventilated into the flue.

The kitchen should have an inlet and outlet ventilator; also place an inlet for fresh air in the hall, and so prevent the staircase drawing its air from the kitchen. W. Dunkin.

WALLING.

Sir,—Will any of the readers of the *Builder* kindly inform me if there is such a work published as a history of walling, say from the time of mud or adobe construction to the latest in concrete or terra cotta? Frank West.

BIRMINGHAM ART-GALLERY.

Sir,—I see in a paragraph published in your last issue [p. 708], your readers are informed that I have executed the large group over the portico at our new Art-Gallery here. The mistake probably arose from the fact that all the other carvings on the exterior of the building were entrusted to me. The group referred to is by Mr. Williamson, of Esher, and I take the present opportunity of congratulating him upon having produced one of the best examples of architectural sculpture we have seen lately.

John Roddis.

BOMBAY MUNICIPAL BUILDINGS.

Sir,—Will you do me the favour of permitting me to acknowledge through you the receipt of the following competitive designs for the new Bombay Municipal Buildings:—

Motto or Device.

1. Kohinoor (A).
2. A thing of beauty is a joy for ever.
3. Drawing-pen.
4. Corinthian grace to nought gives place.
5. Audaces Fortuna juvat.
6. Queen-Empress.
7. Where gleam and gloom their magic spell combine.
8. Chiban.
9. Ferio tego.
10. Stet Fortuna Domus.
11. X in a circle.
12. Kohinoor (B).
13. Bull's-eye.
14. Perseverando vinces.
15. R in a circle.
16. Utility.

E. C. K. Ollivant,
Municipal Commissioner.

Bombay, Nov. 6.

CAPE TOWN DRAINAGE COMPETITION.

Sir,—Many indignant letters have appeared in the English and Cape Town papers from English competitors respecting a recent award by the Town Council of Cape Town *in re* the sewerage and drainage of Cape Town, and as there has appeared no reply to these letters by those who have been accused of mal-decision, I trust you will keep open the question.

On calling for plans of the proposed sewerage of the city, certain rules were laid down for the guidance of the competitors, and every competitor, with the exception of the person who obtained the prize, acted on these instructions: the award was made to the one who disobeyed the conveyed intimations.

This man, previously unknown here, had been appointed clerk of works at a new reservoir, where, under the instructions of the engineer, he was then employed.

The committee to whom the plans were referred were Mr. J. G. Gamble, Hydraulic Engineer for the Colony; Mr. Wood, engineer sent out by Mr. Bateman, hydraulic engineer, or recommended by him as engineer for reconstructing the Molteno Reservoir; and Mr. Cairncross, the City Engineer.

Of course, a storm was immediately raised, when the Town Council, in their immaculate wisdom, considered the award of the referee as final, and paid the money, although earned by disobeying the instructions issued through the City Engineer.

The Medical Board met and condemned the plan, but the money was paid, and the Town Council gave no sign. A Civil Engineer.

COMPETITIONS.

United Methodist Free Church, Headingley.—The building committee of this church have, after a limited competition, selected the designs of Mr. W. S. Braithwaite, architect, South Parade, Leeds, for the proposed new chapel to be built in Victoria-road, Headingley. Sitting accommodation is provided for 600. The estimated cost is about 3,600*l.*

Vicarage, York-road, Leeds.—In a recent competition for St. Alban's New Vicarage, York-road, Leeds, the plans of Mr. W. S. Braithwaite, architect, have been accepted. The cost is to be 1,250*l.*

Door-lock Furniture and a New Sash-Fastener. — Messrs. Jelley, Son, & Jones, manufacturing ironmongers, of Blackfriars-road, are introducing to the notice of builders Jones & Cunningham's patent self-adjusting door-lock furniture, which embodies a very excellent though simple improvement. It can be adjusted to any thickness of door, being provided with a toothed spindle into which a rocking lever is pushed and secured by a sliding rose. Jones & Cunningham's patent guarded-lever sash-fastener is provided on the hook-plate with a slide or shield for the protection of the arm or bar of the fastening.

HER MAJESTY'S THEATRE, HAYMARKET.

The owners of the above theatre were summoned under 41 & 42 Vict., c. 32, s. 11, by the Metropolitan Board of Works, for not complying with requisitions served upon them by the Board to remedy certain alleged structural defects in the building, so as to prevent danger from fire resulting to the public frequenting the same.

Mr. Besley, instructed by Mr. Thomas Burton, appeared for the Board; and Mr. Pollard for Mr. Tod-Heatly, the present owner.

Mr. Besley having stated the case for the Board,

Mr. Pollard raised a preliminary objection that the theatre was the property of the Crown, and, therefore, the consent of the Commissioners of her Majesty's Woods and Forests should have been obtained before these proceedings were commenced.

Under these circumstances, the magistrate adjourned the summons until the 15th of December, expressing a hope that in the meantime the parties would come to an arrangement to get the works done.

WOODEN BUILDINGS.

KNIGHTLEY *v.* SMITH.

This case, under the Metropolis Management and Building Acts (Amendment) Act, 1882, 45 Vic., c. 14, sec. 13, was heard at the Hammersmith Police-court, on the 21st inst., before Mr. Paget.

Defendant, who is a coal agent, had caused to be erected a movable wooden office on surplus land in Uxbridge-road, Shepherd's-bush, adjoining the Hammersmith and City Railway, without a license in writing from the Metropolitan Board of Works, whereby a penalty not exceeding 5*l.* had been incurred.

The plaintiff (the District Surveyor for Hammersmith) did not press for a penalty, his desire being merely to enforce obedience to an Act which about two years since the Board obtained with a view to the suppression of wooden buildings.

The Magistrate concurred in this view, and there being no defence, fined the defendant in a nominal penalty and costs. The defendant then undertook to apply to the Metropolitan Board of Works for the necessary licence.

Mr. Haynes appeared for the defendant.

OWNERSHIP OF PLANS.

GOODING *v.* EALING LOCAL BOARD.

This was an action brought by Mr. J. B. Gooding, residing at Ealing, against the Ealing Local Board, to compel the return to the plaintiff of certain plans and sections relating to a proposed new building, which had been sent in by him to the Local Board for approval, under their by-laws.

The plans, not being in accordance with the by-laws, were disapproved by the Board. Plaintiff then applied to them for the return of the plans. This was refused; hence the present action.

The case was tried on the 13th inst. in the Queen's Bench Division, before Mr. Justice Mathew, without a jury, and resulted in a verdict for the defendants, with costs.

The Judge was of opinion that the regulation on the back of the building notice signed by the plaintff, viz., that "all plans will be retained in the surveyor's office for record" was a just and reasonable one, inasmuch as he considered that all plans, whether approved or disapproved, might be required by the Board as documentary evidence.

Suggested City Improvements.—Mr. A. B. Hudson, writing to the *City Press*, says:—The proposed extension of the Post-Office Savings Bank on land situated on the north side of Knightrider-street, extending to Carter-lane, and from Addle-hill on the west, to Bell-court on the east,—for which the Parliamentary notices for the necessary powers to acquire the land are now before the public,—suggests the opportunity of carrying out an important improvement, which could be undertaken by a combined arrangement between the Commissioners of Sewers, the Postmaster-General, and Messrs. Pawson & Co. (Limited). The outline of the scheme is as follows:—To extend the compulsory powers so as to embrace the whole block of buildings within the area of the four streets, viz., Carter-lane, on the north; Knightrider-street, on the south; Godliman-street, on the east; and Addle-hill, on the west. These four streets could then be widened to the extent considered advisable by the Commissioners of Sewers. The Commissioners also to acquire part of the premises of Messrs. Pawson, next to Paul's-chain, so as to widen that important thoroughfare. The widening of Paul's-chain would prove a great improvement; the too close proximity of the present warehouses would be remedied; the spread of a conflagration would be cut off, should a fire occur on either side of the street; and an improved view of St. Paul's from this side would be opened up.

The Student's Column.

IRON ROOFS.—I.

THE introduction of iron as the material for the framework of modern roofs has enabled the architect to construct them of spans that make even that of Westminster Hall appear insignificant, the span of which is hardly one-third of the iron roof over the New-street Station at Birmingham, and little more than one-fourth of that over the Midland Station in London. Its use, however, has only been gradually adopted for roofs, owing to the supposed dangers arising from the expansion and contraction of the metal by changes of temperature, since a bar of iron 100 ft. long will expand nearly 1½ in. while the temperature rises from the freezing to the boiling-point of water, and will contract the same amount as the temperature falls again. Expedients have, however, been devised and adopted of preventing the mass of ironwork which forms the framework of these roofs from having any dangerous effect on the supports consequent on a rise or fall of the temperature.

As iron was first used for constructive purposes in the form of castings, it was natural that cast iron should be employed for the earlier iron roofs. Thus we find a roof of this material erected about fifty years ago, over the model-room at the Butterley Ironworks, the span of which was 34 ft. The framework of this roof consisted of cast-iron principals in the form of a curb roof, the arrangement of the parts resembling that of a queen-post roof of wood. The principal frame was cast in four parts, screwed together by strong bolts, with a horizontal bar of wrought iron going from foot to foot, which appears to be quite unnecessary, as the framework was supported on a horizontal cast-iron girder. Details of this roof will be found in Tredgold's "Carpentry" (Appendix to 3rd edition). The purlins which carry the common rafters are fixed in sockets cast on the framework. Another roof of 40 ft. span, erected over the Smithery at Butterley (also illustrated in Tredgold), is constructed on the king-truss principle, the parts under compression being of cast iron, and those in tension of wrought iron; the principals are of cast iron of the "fish-belly" form, supported by two cast-iron struts on each side; the wrought-iron tie-rod is held up in the middle by a king-bolt passing through the heads of the principals, and there are two other vertical bolts, one on each side, passing through each principal at one-third its length from the vertex, the lower end passing through the foot of the lower strut, and also the tie-rod. The struts have a cross section, and the principals a T-section, the cast-iron purlins are L-section, and the timber rafters are spiked to them. In the same work will be found an illustration of a queen-post roof of cast-iron, with a span of 27 ft., erected at the Nottingham waterworks; the principal, queen, and strut are cast in one piece for each side, and are connected by a hinged joint, with a horizontal straining-beam; while a horizontal wrought-iron tie-rod passes through the feet of the principals, and also those of the queens. The principals are of T-section, and the other parts of cross-section.

The use of cast iron in framing roofs has of late years been discontinued, except sometimes for struts which sustain a compressive strain; all the other parts being made of rolled iron, either round, flat, or of I, T, or L section. The Mansard roofs of the Houses of Parliament were constructed with flat wrought-iron horizontal tie-bars and vertical tension-rods; the principals are of T-section; the struts are cast-iron of cross-section. Cast iron was also used for the purlins, and for the sockets and shoes by which the ends of the pieces were held together. Cast-iron tiles were used for the covering; these were of ⅜-in. metal and galvanised to prevent corrosion, and were bolted to the rafters. No timber is used in any part of these roofs, which are wholly of iron.

In roofs of iron it is not necessary that the tie-beam should be horizontal, as in trusses of timber, unless it is required to carry a ceiling or floor; and where extra height is required, as in a railway station or workshop, the tie is made to slant upwards from the supports, so as to increase the clear height in the middle. A common form of roof for spans up to 50 ft. is shown by fig. 1, where the principals A B, A D, are usually of rolled T-iron, the ties B F, F E, E D, A F, and A E, of flat or round iron, as being mainly subjected to tensile strain in the direction of their lengths. The struts C F, E G, being under compression, are sometimes made of cast iron, either round and hollow, or of + section, and made with a swell in the middle. If wrought iron is used for the struts it is of L or T section.

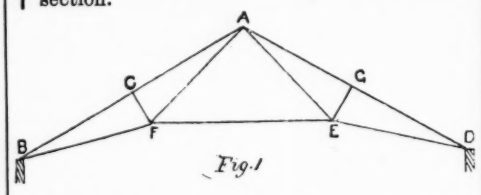


Fig. 1

Upon examination, it will be seen that this roof consists apparently of two trusses similar in form to a king-post truss, only inverted; thus A F B C and A E D G appear each to be a king-truss, having, in the former case, A F, F B for the rafters, A B for the tie-rod, and C F for the strut. But in this roof the strains to which these parts would be subjected in a king-truss are reversed, as A F, B F, and A B are stretched instead of being compressed, while C F is compressed instead of being stretched. Each of them, however, forms a complete truss as it stands, and the two are united by the horizontal bar EF, which prevents any horizontal thrust on the walls.

For wider spans a similar form of roof may be employed, but with a larger number of struts and ties, as shown by fig. 2, where G H and D I

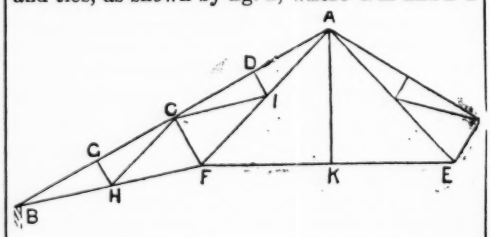


Fig. 2

are struts under compression, and C H and C I are tension rods. The bending of the tie-rod E F may be prevented by a light king-bolt, A K, passing through the head of the rafters and bolted under the tie at K.

A variety of the same kind of roof is shown by fig. 3, where the tie-rod is in five distinct

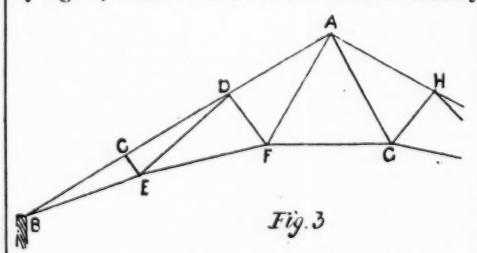


Fig. 3

parts, coupled together at E, F, G; the struts C E, D F, G H are under compression, while A F, A G, and D E act as ties.

In a roof of either of these forms the scantlings for a span of 50 ft. may be as follow:—Principals of ½-in. T-iron 4 in. deep by 4 in. wide; struts of hollow tubing, D F being 2 in. diameter, and C E 1½ in. diameter, or else of ½-in. L-iron, 3 in. by 2 in., and 2 in. by 2 in. respectively; the tie-rods A F and D E of ¾ in. round iron, or ½ in. flat iron 1 in. wide; the tie-bars B E, E F, F C of 1½ in. round iron or ⅝ in. flat iron 2 in. deep. The feet of the rafters are made to rest in cast-iron sockets fixed to the wall or other support, and the tie-rod is attached to the feet of the rafters by the end being flattened out and held by key wedges between two plates bolted on the sides of the rafters. The ends of all the ties should be screwed into a union or socket-piece, so that they can be tightened up as much as may be required in order to give stiffness to the truss. The purlins are usually of L or T iron, the size of which will depend on the distance apart of the trusses, if 10 ft. apart the purlins may be about 4 in. by 3 in., and of ⅜-in. or ½-in. metal.

The strains on the parts of these roofs can be ascertained by means of a diagram, as before described for king-post roofs of timber (see page 677). In fig. 4, let the vertical line A C represent, on any scale, the pressure, W, on one side of the truss shown by fig. 1; take A B for the pressure at B (fig. 1), which we may suppose to be one-fourth of W; take B D equal to half W, or the pressure at C (fig. 1); draw B *b*, D *d*, parallel to A B (fig. 1), C *b* parallel to B F, *b d* parallel to C F, *d c* parallel to E F, and C *c* parallel to A F. Then the lines in fig. 4 will represent on scale the strains to which each of the parts of the truss to which they are parallel will be subjected in the direction of their lengths. Thus B *b* is the compression down B C in the truss, and D *d* that down A C; *b d* is the compression down the strut, C F; C *b* is the tensile strain in B F, C *c* that in A F, and *c d* that in E F. Therefore, by means of the known rules for the strength of materials the scantling of each piece can be determined.

We will suppose, for example, that a roof of the design shown by fig. 1 has a span of 30 ft. and a pitch of 30°, the distance apart of the trusses being 10 ft. Then the length of the rafter will be 17⅓ ft., and if the load to be supported is put at 40 lb. per square foot, we have 400 multiplied by 17⅓, or 6,932 lb. for the value of W, which we take approximately as 60 cwt. Then the load at C is 30 cwt.; that at B and A, 15 cwt. each, for one rafter. Take A C (fig. 4)

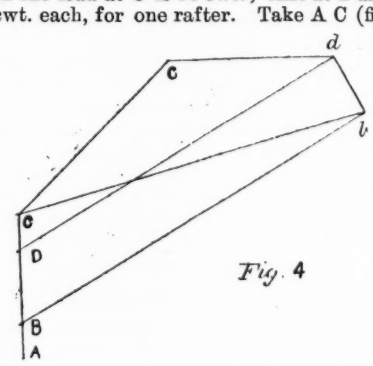


Fig. 4

to represent 60 on any scale, A B to be 15, and B D to be 30, then we shall find by measurement that B *b* is 163, D *d* is 150, C *b* 147, C *c* is 86, *c d* is 67, and *b d* is 26, all these numbers representing in hundred-weights the strains along the several parts of the truss (fig. 1) to which these lines are parallel.

Allowing 5 tons, or 100 cwt., per square inch as the utmost tensile strain to which wrought iron should be subjected in a truss, we see that the tension rod, B F, which is strained with 147 cwt., must have a sectional area of nearly 1½ square inch, while the tie A F, which is strained with only 86 cwt., need not be more than ⅞ square inch of section, and the tie E F, being strained with 67 cwt. will only require to be ¾ in. in section. The rafter, B C, may be considered as a long pillar sustaining a load of 163 cwt. in the direction of its length, and will require a sectional area of 4 square inches; the strut C F is also a pillar sustaining a load of 26 cwt., and will require a sectional area of 1⅛ in.

In order to allow for the expansion and contraction which takes place in iron roofs of large span, the feet of the rafters are secured to a cast-iron shoe, which is placed upon iron rollers, so that it can move freely on a cast-iron template laid on the wall. By this arrangement, full play is allowed to the truss, and no injurious thrust is brought on the supports when the iron expands by rise of temperature.

We have all along considered the load as acting vertically on the truss, but there are occasions when it may be strained by an oblique force, as in the case of a gale blowing strongly on one side of the roof, in which case some of the tension bars in the roof, fig. 2, may be temporarily subjected to a compressive strain. Thus, if the rafter A B yielded at all at C it would tend to thrust along the tie-rod F E, and if this bent upwards it would produce a compression in the bolt A K. A certain amount of compression would also be produced from the same cause in the tension rods C H and C I. The several parts must, therefore, be made of sufficient strength to prevent them from yielding under a temporary alteration of strains, for a long rod of iron that would bear a heavy tensile strain will bend under a very moderate amount of compression.

Enfield, Middlesex.—The memorial stone of a Mission Hall, situate at New Lane, Enfield, was laid on Tuesday afternoon by Mr. J. Holbarn, J.P., chairman of the Congregational Union. The architect is Mr. W. D. Church, of South-place, Finsbury, and the builder is Mr. E. Tinson, of Kensington.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

298, Improved Apparatus for Opening and Closing Casements and Ventilators. J. Bruce.

For all casements and for the louvres of ventilators. The improvement consists in attaching to the frame a metal bracket-piece carrying a rotating bar, with a screw thread, upon which travels a block with a guiding piece working on a slot along the bracket. To one end of the rotating-bar is attached a pulley, so that by the action of an ordinary blind cowl over the pulley the bar is rotated, and the block is caused to travel up the rod. A lug upon the block-piece works on a slot upon a plate attached to the casement or ventilator, so that the travelling of the block up or down causes the casement or ventilator to open or shut. Thus the casement is always locked whether open or closed.

1,504, Cements. F. W. Gerhard.

Near Wolverhampton there is found a compound locally known as "rotch," "bat," or "bovin," an impure silicate of alumina and lime, comparatively inexhaustible, which has hitherto not been utilised. It is deficient in the necessary quantity of lime; but by adding twice its weight or thereabouts of di-carbonbate of lime, and burned with the bat, either separately or together, it forms, when reduced to powder and mixed, an excellent cement. Black lime, which is found in a lower stratum, is also treated so as to be available for cement.

542, Improved Polish for Furniture or other Articles of Wood, Brass, &c. E. A. Russell.

This consists in the combination of vinegar, methylated spirit, and linseed oil, to which is added a small quantity of the analine dye, known as Bismarck brown. These ingredients, when combined in suitable proportions, give not only a polish for furniture, &c., but will extract ink and other stains from the articles on which it is used.

351, Improvements in Brick Kilns. H. Knowles.

These improvements are applied to continuous or semi-continuous action kilns for drying and burning bricks. It applies to down-draught kilns, and gives the burner more effectual control over the working of the kilns in transmitting the waste or surplus heat from one chamber to another. It also secures greater economy in fuel and labour and consumption of smoke by passing the products of combustion from chamber to chamber in as direct a manner as possible. It also provides for effectually closing the connexion between the chambers when necessary. The chambers are separated from each other by an improved partition wall, at the bottom of which on one side are constructed flue openings, which lead into damper chambers. The dampers are worked from outside the kiln, and the flues closed when necessary. A series of openings or perforations lead the heat into a next chamber, where goods on each side are heated by radiation and diffusion of heat. Great economy is claimed, as all the heat is utilised and regulated, and the smoke, especially when burning the best class of goods, is thoroughly consumed.

APPLICATIONS FOR LETTERS PATENT.

Nov. 14.—14,989, R. L. Lowe, Cement or Composition for Laying Floors or Pavements.—14,997, W. H. Burdock, Glazing Skylights, Horticultural Buildings, &c.—15,014, J. Thompson and J. H. Bryant, Improved Artificial Stone.—15,019, W. Stewart, Stone-cutting Apparatus.

Nov. 15.—15,037, R. Anderson, Improvements in Flushing Apparatus.—15,042, A. Waters, Hot-water Pipes for Heating Buildings.—15,047, W. Macrone, Machinery for Varnishing or Sizing Paper preparatory to Decoration.—15,048, W. Macrone, Varnishes and Sizes.—15,068, A. Emanuel, Cleansing Pipe to Overflow of Water-closet Basins.—15,070, S. S. Phillips and H. F. Green, Water-closets.—15,071, D. Tennant, Drain-pipe Trap.—15,077, J. Halley, Public Urinal.

Nov. 17.—15,086, J. Inshaw, Domestic Fireplaces.—15,088, E. Jones and J. Calcott, Cheeks for Register Stoves. — 15,090, W. Fulleylove, Improved Heating Stove. — 15,095, A. Laurencot, Safety Device for Doors.—15,115, J. W. Heward and J. L. Heward, Manufacture of Cut Nails.

Nov. 18.—15,124, T. Pickles and B. Blakey, New Process for Treating Timber.—15,157, A. H. Kendall, Disconnecting Soil-pipes from Sewers, and Ventilating same. — 15,161 and 15,162, W. S. Morton, Embossing Canvass for Decorating Walls, &c.—15,186, C. Wiltshire and J. Wiltshire, Glazing Skylights, Windows, &c.

Nov. 19.—15,192, W. Russell, Over-mantels and other Ornamental Frames.—15,193, W. Wright, Heating Apparatus for Mansions.—15,197, E. W. Turner and J. Reynolds, Circular Rack and Band Machine for Sawing Timber.—15,203, J. Matthews, Electric House Bells.—15,204, W. Chynoweth, Stop, Chamfer, and other Planes.—15,228, H. A. Stuart, Ratchet Drills or Braces.—15,202, R. H. Hayhurst, Gully for Sanitary Purposes.—15,255, A. Gerlach and H. Unger, Improvement in Kitcheners.

Nov. 20.—15,266, A. B. Milne, Stay for securing French Casements and other Hinged Sashes.—15,275, J. T. Welch, Manufacture of Bricks and Tiles.—15,301, L. Coppard, Improvements in Hanging Sashes.—15,314, J. C. Spooner and P. S. Spooner, Apparatus for Supplying Water Cisterns with Disinfectants.

PROVISIONAL SPECIFICATIONS ACCEPTED.

10,164, S. Bivort, a New Mode of Flooring.—12,787, W. Corteen, Opening and Closing Windows.—13,452, B. Hawerkamp, Grates and Kitcheners.—13,817, F. W. Turner, Flushing Tanks or Cisterns.—13,891, W. Elkin and C. J. Elkin, Improvements in Ventilators.—14,036, F. C. Cramer, Manufacture of Glue.—14,196, F. W. Rees, Ball Castors.—14,324, R. M. Justice, Furnaces for Burning Cement.—14,365, W. Dawson, Mills for Reducing Cement, &c.—4 040, J. Gilmore, Ventilating Apparatus.—12,965, W. H. Vivian, Syphon-flushing Cistern.—13,243, E. Sherwood, Manufacture of Rolled Cathedral Glass.—13,422, A. Caspar, Imitating Stained Glass.—13,864, A. Finch, Preventing Draughts under Doors.—13,912, C. Smith and F. Smith, Opening and Closing Fanlights, Window Skylights, Ventilators, &c.—13,981, A. Yates and W. Smith, Adjusting the Table of Circular-saw Frames.—14,480, H. Gilchrist and C. Bellamy, Gas Pliers.—14,687, W. R. Lake, Regulating the Supply of Fresh Air to Houses.—14,687, G. Messenger and S. T. Messenger, Ventilators and Chimney Cowls.—14,868, A. Spencer, Holding Sliding Windows in Closed or more or less Open Positions.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

625, E. Norcombe, Lock Furniture.—728, F. Alford, Floating Flushing Valve.—1819, J. Noble, Glazing Street Lamps.—2,000, J. Imray, Improved Water Meter. — 2,129, W. Bennett, Automatic Flushing Apparatus.—2,404, G. Harrington, Ventilation.—2,640, A. Guattari, Manufacture of Marble.—2,805, H. Renold, Cutting or Turning Tool.—6,375, J. Lamers, Combined Pocket Tools.—10,375, H. Blyth, Manufacture of White Lead.—10,723, H. Tunis, Planing, Tongueing, and Grooving Machine.—12,434, C. Watkins and W. Sutton, Distemper and Whitewash Brushes. — 13,621, R. Kirton, Chimney Top and Ventilator.—13,770, T. Elsley, Metal Frames for Casement Windows.—2.787, A. Guattari, Manufacture of Marbles. — 2,847, A. Guattari, Manufacture of Imitation Marble.—2,920, J. Lorrain, Ventilators.—2,950, W. Fawcett and H. Ashley, Improvements in Fireplaces.—3,036, T. Anwyl, Chimney Pot.—5,384, J. Russell, Kitchen and Cooking Ranges. — 13,875, T. Elsley, Metal Frames for Casement Windows.—13,943, E. Clark, Floating Breakwaters. — 13,947, W. R. Lake, Metallic Lathing.

RECENT SALES OF PROPERTY.

NOVEMBER 20.

By FULLER, MOON, & FULLER.

Croydon—1 to 6, Cairo-cottages, and 6 to 15, Lower Drayton-place, 974 years, ground-rent 40*l.*	£2,050
Nos. 1 to 12, Upton-cottages, freehold	1,630
Beddington Corner—Two cottages, 299 years, no ground-rent	425
Two cottages, partly leasehold and freehold	480

NOVEMBER 21.

By G. A. WILKINSON.

Somers-town—17 and 19, Charrington-street, 38 years, ground-rent 13*l.* 10s.	970

By HARDS, VAUGHAN, & JENKINSON.

Blackheath—15, Vanbrugh Park, 73 years, ground-rent 16*l.*	1,740

By REYNOLDS & EASON.

Blackeath—7, Vanbrugh Park-road, 73 years, ground-rent 12*l.* 5s.	900
Crouch End—1, Crescent-road, 84 years, ground-rent 15*l.*	865

By GREEN & SON.

Vauxhall—Prince's and Clarence Wharfs, 42 years, rent 250*l.*	945
Acton—273, 275, and 277, Uxbridge-road, 79 years, ground-rent 18*l.* 15s.	855
Blackheath—1 and 2, Richmond-villas, 82 years, ground-rent 32*l.*	1,920

By BAKER & SON.

Rudgwick, Sussex — The freehold residence, Hermongers, and 274 acres	12,400
Marylebone—114 and 116, Lisson-grove, freehold	3,810
Ground-rent of 34*l.* a year, reversion in 15 years	1,210
Sutton-at-Hone, Kent—A plot of land, 2a. 1r. 7p., freehold	500
Finchley—39 plots of freehold land	3,315
Hendon—15 plots of freehold land	620
New Southgate—15 plots of freehold land	387

NOVEMBER 24.

By W. SIMMONDS.

Camberwell—45 and 47, Albany-road, freehold	1,480

By FOX & SON.

Dalston—39, Wilton-road, 65 years, ground-rent 5*l.*	330
Peckham—19, Soames-street, freehold	570
Old Ford—16, Milton-road, 76 years, ground-rent 3*l.* 10s.	235
Nos. 145 and 147, Armagh-road, 65 years, ground-rent 6*l.*	450

NOVEMBER 25.

By J. HIBBARD.

St. Luke's—2, Macclesfield-terrace, freeho'd	910
Stoke Newington—Church-street, Ivy House, copyhold	500

By S. HERRICK.

Marylebone — 22, Manchester-street, 3¼ years, ground-rent 8*l.* 8s.	185
Clerkenwell—30, Thomas-street, 25 years, ground-rent 1*l.* 10s.	190

By VENTOM, BULL, & COOPER.

Hyde Park—111, Westbourne-terrace, with stabling, 42 years, ground-rent 30*l.*	£4,000
Clapton—1, Maclaren-street, freehold	280

By PRICKETT, VENABLES, & Co.

Lambeth—12, Wincott-street, 84 years, ground-rent 7*l.*	535
No. 1, Reedworth-street, 81 years, ground-rent 2*l.*	485

By MESSRS. FOSTER.

Hyde Park—17, Southwick-crescent, 52 years, ground-rent 2*l.*	4,525
No. 8, Somers mews, 43 years, ground-rent 5*l.*	1,000
Brighton—39, Sussex-square, freehold	2,325
The freehold stabling, in rear	800

By E. ROBINS & HINE.

Drury-lane—Freehold house and warehouses	2,600
Nos. 1 to 4, Harford-place, freehold	1,890

By W. H. MOORE.

Kentish-town—6, 8, and 12, Frideswide-place, 64 years, ground-rent 18*l.* 18s.	970
No. 13, Peckwater-street, 64 years, ground-rent 5*l.*	270
No. 15, Hammond-street, 64 years, ground-rent 5*l.*	235

By DEBENHAM, TEWSON, FARMER, & BRIDGEWATER.

Aldersgate-street—Ground-rent of 450*l.* a year, reversion in 49 years	16,200
Blandford-square—Ground-rent of 101*l.* a year, term 52 years	2,000
Ground-rents of 105*l.* 6s. 8d. a year, term 55 years	2,235
Ground-rents of 72*l.* a year, term 52 years	1,580
Ground-rents of 59*l.* 13s. 4d. a year, term 55 years	1,100
Ground-rents of 43*l.* 8s. a year, term 52 years	710
Clapham—Ground-rent of 8*l.* 13s. 6d., term 15 years	75
Ground-rent of 45*l.* 19s., term 21 years	800
Ground-rent of 72*l.* 13s., term 24 years	1,055
Camberwell—Denmark-road, Myrtle Cottage, 40 years, ground-rent 4*l.* 5s. 6d.	270

NOVEMBER 26.

By BRIANT & SON.

South Lambeth—Copyhold, ground-rent of 60*l.*, reversion in 58 years	1,550

By WALTER HALL.

Stoke Newington—64, Hawkesley-road, 89 years, ground-rent of 6*l.* 10s.	255
Teddington—Gomer-road, Tyre Cottage, freehold	450
Peckham—207, Hollydale-road, 88 years, ground-rent 4*l.* 13s. 4d.	305

By GEORGE GOULDSMITH, SON, & Co.

Belgravia—56, Hans-place, 40 years, ground-rent 100*l.*	2,100

By J. BAKER & WILKINSON.

Neasden — The Model Farm, with Stabling, 1a. 0r. 12p. freehold	1,600
Eight plots of freehold land	715

By DANIEL SMITH, SON, & OAKLEY.

City, Queen-street—A plot of land, area 1,180 ft., term 80 years, let at 760*l.* a year	—

By DALE & SON.

Clapton—Ground-rent 37*l.* 10s. a year, reversion in 49 years	965
St. George's-in-East—20 and 22, Prusom-street, copyhold	140
Mile End—20, Knott-street, freehold	125
145 to 151, Bridge-street East, 62 years, ground-rent 20*l.*	1,000

NOVEMBER 27.

By BEADEL & Co.

Clapton—Pond-lane, Saratoga House, and 2a, Pond-lane, 98 years, ground-rent 12*l.*	580
2 to 28 even, Pond-lane, 98 years, ground-rent 84*l.*	3,910
13 and 15, Colenzo-road, 98 years, ground-rent 10*l.*	550

By M. HUMM.

East India Dock-road—Nos. 439 and 441, 89 years, ground-rent 10*l.* 10s.	695

By JAMIESON & STANHAM.

Putney—College-street, a plot of freehold land	130

By H. J. BLISS & SONS.

Cambridge-heath—3, St. Andrew's-road, 82 years, no ground-rent	250

By C. C. & T. MOORE.

Stepney-green—4, 5, and 6, Garden-st., freehold	550
Poplar—497 and 499, Manchester-road, 58 years, ground-rent 7*l.* 10s.	300

By NEWBON & HARDING.

Homerton—178, High-street, copyhold	1,000
Hackney—41, Groombridge-road, 69 years, ground-rent 6*l.*	375
City-road — 68, Shepherdess-walk, 58 years, ground-rent 6*l.* 6s.	760
5, Graham-terrace, 54 years, ground-rent 6*l.*	350
Hoxton—11, Hemsworth-st., 25 years, gr.-rent 4*l.* 4s.	280
Kingsland-road — Nos. 239 and 241, 48 years, ground-rent 28*l.*	500
Pentonville—27, Amwell-street, 21 years, ground-rent 6*l.* 15s.	500

By E. STIMSON.

Camberwell—44, 46, and 48, Blake's-road, 83 years, ground-rent 10*l.*	450
Hackney—68 to 72 even, Frampton Park-road, 62 years, ground-rent 20*l.*	1,225
72 to 80 even, Devonshire-road, 62 years, ground-rent 25*l.*	1,520
19 to 24, Havelock-road, 71 years, ground-rent 18*l.* 18s.	1,005
15, 16, and 17, Cross-street, 71 years, ground-rent 9*l.* 15s.	425
19, Cross-street, and 38, Palace-road, 71 years, ground-rent 6*l.* 10s.	265
Hoxton—16 to 22 even, De Beauvoir-crescent, 46 years, ground-rent 16*l.*	1,250
23 and 24, Gopsall-st., 53 years, ground-rent 11*l.*	750

By GLASIER & SONS.

Barnsbury—74, Bride-street, 76 years, ground-rent 7*l.* 10s.	400
Willesden—1a, St. Alban's-road, 92 years, ground-rent 9*l.*	380
Holloway-road—No. 464, rental of 48*l.*, term 2¾ years, and short reversion	170
No. 466, Rental of 45*l.*, term 2½ years, and short reversion	180

Holloway-road—No. 468, rental 42*l.*, term 2 years, and short reversion	£180
No. 474, rental of 43*l.* 10s., 2¾ years, and short reversion	150
Nos. 476, 478, and 480, rental of 99*l.*, term 3½ years, and short reversion	580
Improved ground-rent of 8*l.* a year, term 2¾ years, and short reversion	140
Improved ground-rent of 15*l.* 10s., term 20 years	155
Improved ground-rent, 41*l.* 0s. 6d., term 20 years	390
Improved ground-rent, 46*l.*, term 20 years	420
Eighty shares of 50*l.* each (2*l.* 10s. paid), in Westminster and General Life Assurance Co.	1,122

MEETINGS.

MONDAY, DECEMBER 1.

Royal Institute of British Architects.—Adjourned discussion on Mr. Stannus's paper "On the Internal Treatment of Cupolas in General, and that of St. Paul's Cathedral in particular." 8 p.m.

Clerks of Works Association.—Monthly Meeting at 31, Spring-gardens. 7 p.m.

Society of Arts (Cantor Lectures).—Mr. Harold B. Dixon, M.A., on "The Use of Coal Gas."—I. 8 p.m.

TUESDAY, DECEMBER 2.

Institution of Civil Engineers.—(1) The Hon. R. C. Parsons on "The Working of Tramways by Steam." (2) Mr. W. Shellshear on "The Sydney Steam Tramways." 8 p.m.

Society of Biblical Archæology. 8 p.m.

WEDNESDAY, DECEMBER 3.

British Archæological Association—(1) *Résumé* of the Tenby Congress, by Mr. Thomas Morgan. (2) Mr. C. Lynam on "The Inscription on the Cross at Carew." (3) Mr. G. R. Wright on "The Maunday Distribution." 8 p.m.

Sanitary Assurance Association.—Dr. Norman Chevers on "House Sanitation." (Parkes Museum.)

Society of Arts.—Mr. W. H. Preece on "Electric Lighting in America." 8 p.m.

THURSDAY, DECEMBER 4.

Royal Archæological Institute.—(1) Mr. W. H. St. John Hope "On the Augustinian Priory at Repton." (2) Admiral Tremlett "On the Menhir Autel at Kernuz, Finisterre." 4 p.m.

Parkes Museum.—General Meeting of Members to receive Report from the Council." 5 p.m.

Society of Antiquaries.—8.30 p.m.

Society of Arts (Howard Lectures).—Mr. W. Anderson on "The Conversion of Heat into Useful Work." II. 8 p.m.

FRIDAY, DECEMBER 5.

Architectural Association.—Dr. Dresser on "Some Features of Japanese Architecture and Ornament." 7.30 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. H. H. Dalrymple-Hay on "Trigonometrical Surveying." 7.30 p.m.

Miscellanea.

New Buildings in Finsbury Pavement. Extensive new premises are at present being built by the Finsbury Estates Company, in Finsbury-pavement, at the corner of Cross-street. During the progress of the excavations the original level of the ground surface of old Finsbury Fields was found to be between 13 ft. and 14 ft. below the present surface of the roadway. The new buildings, at the basement level, will cover an area of 13,000 superficial feet, and at the ground-floor level 7,500 ft. The new basement, about 15 ft. in depth, is constructed with massive iron columns, girders, and concrete, and will, together with a suite of offices on the ground and first floors, be occupied by Messrs. Probyn & Co., ale and beer merchants. The buildings will have a frontage to Finsbury-pavement 46 ft. in length, with a return frontage in Cross-street 119 ft. long. The Finsbury-pavement elevation will be 62 ft. high, and will be faced with white Suffolk brick, and Portland and Dumfries stone, with polished Aberdeen granite for window dressings and ornamentation. At the corner of Finsbury-pavement and Cross-street the buildings will be surmounted by a lofty gable. The Cross-street frontage will be 52 ft. in height, and, like that in Finsbury-pavement, faced with white Suffolk brick and Portland and Dumfries stone. All the upper floors are intended to be arranged in suites of offices and chambers. Mr. J. W. Brooker, of Railway Approach, London Bridge, is the architect, and Mr. W. Downs, of Hampton-street, Walworth, the builder, whose contract amounts to 14,967*l.* Mr. W. W. Game is foreman of the works.

The Nail Trade.—In consequence of the heavy and differential charges, &c., made by the railway companies coming to Birmingham some of its prosperous trades are leaving the town. It was pointed out in the *Builder* some time ago that there had been an amalgamation of the wrought nail-makers, and that they had removed their works to Chepstow, on the sea-coast. Now we find the wire and wire nail trade following suit, and removing out of the country altogether to Belgium and Germany. These nails appear to be superseding cut nails everywhere amongst builders.

Builders' Benevolent Institution.—At a general meeting of this Institution, held on Thursday afternoon at Willis's Rooms, Mr. Stanley G. Bird, president, in the chair, five pensioners were elected,—four men and one woman. There were nine male candidates, viz., William Humphrey, of Barnes, aged 66 (fourth application); Matthew Harrison, of Exeter-street, Lisson-grove, aged 74 (third application); John Richmond Bisley, of Lynton-road, Bermondsey, aged 74 (second application); George Shearing, of Ingatestone, aged 65 (second application); Reuben Hurren, of Dartmoor-street, Notting-hill, aged 66 (second application); William Charles Allen, of Kilburn Park-road, aged 61 (second application); William Hutton, of Harewood-place, Marylebone, aged 63; James Robert Rawley, of Downham-road, Kingsland, aged 64; and William Thornton, of St. John's-hill, Wandsworth, aged 62. The female candidate was Harriet Shapland, aged 66, widow of James Shapland, late of York-road, Lambeth. The poll opened at two p.m. and closed at four p.m. Shortly after the last-named hour the scrutineers (Messrs. Thomas Stirling and Thomas F. Rider) declared the result of the voting to be as follows, viz., Humphrey, 835 votes; Harrison (dead since the voting papers were issued), 248; Bisley, 183; Shearing, 1,313; Hurren, 403; Allen, 1,426; Hutton, 1,036; Rawley, 356; Thornton, 94; and Shapland, 103. The chairman therefore declared the successful candidates to be Messrs. Allen, Shearing, Hutton, and Humphrey, and Mrs. Shapland,—Messrs. Shearing and Allen owing their election to a great extent to votes allotted to them in respect of their having been formerly subscribers to the Institution.

Trial of Steam Fire-Engines.—During the past week a trial has taken place at Messrs. Merryweather & Sons' works of what are described as "two of the most powerful steam fire-engines in the world." They have been constructed for the Corporation of Liverpool. Capt. Nott Bower (chief constable of Liverpool) visited the works when the new engines were displayed. Steam was raised in the boiler of No. 1 engine (which indicates 100 horse-power) in nine minutes and a half, and the steamer was tested for its fire-extinguishing powers. A jet was thrown 300 ft. with great force, the engine being capable of working twelve streams simultaneously. At the same works trial has also been made of one of the fifteen steam tramway locomotives now being constructed for the North London tramways. These engines have cylinders 7½ in. diameter, and 12-in. stroke, and it is stated that each is capable of drawing three loaded cars at a speed of eight miles per hour, at a working cost of 30 per cent. less than horse-power. It is expected that the whole of these engines will be running in the course of the next two months.

The Sanitary Condition of the East End.—At the meeting of the Whitechapel District Board of Works last week, it was moved by Colonel Munro, seconded by Mr. Catmur, and resolved, that a small committee be appointed by the Board to consider the charges made by the Jewish Board of Guardians against the sanitary administration of the district, and to investigate the whole circumstances; and that the committee be empowered to employ such assistance as in their opinion may be necessary to prosecute their inquiry. In the course of the discussion, Mr. Harris urged the appointment of two more sanitary inspectors as the most efficacious way of meeting the complaints. Mr. Barham said that although that might be one of the results of the committee's investigations, it was only a part of the question, and did not dispense with the necessity for investigation. Mr. Struthers did not see how the appointment of two more sanitary inspectors could alter the superstructure of the houses complained of.

The Uses of Coal-Gas.—A course of three Cantor Lectures, on "The Uses of Coal-Gas," will be delivered at the Society of Arts, by Mr. Harold B. Dixon, M.A., on December 1st, 8th, and 15th. The subject of the first lecture will be on "The Composition of Coal-Gas, its Properties, its Combustion;" the second, "Coal-Gas as a source of Light"; and the third, "Coal-Gas as a source of Heat."

Working Class Thrift in New South Wales.—During 1883 the number of deposits in the Post Office Savings Banks was 147,627, representing £922,803. This is exclusive of the large sums deposited in other Savings Banks, or invested in Land or Building Societies.

Housing the Poor.—The principal facts that have been elicited after all that has been written and said on this subject, may be thus summarised:—1. That the poor of the labouring class, out of their limited resources, cannot afford to pay more than a rental of from 1s. to 2s. per week for their dwellings, of whatever size and construction, and wheresoever situate. 2. That no practical plan has yet been devised by which dwellings can be built, which, after paying a fair market price for land, labour, and material, can be let at these low rentals, and prove remunerative to the builders. 3. If this desirable end is to be accomplished, it must depend to some extent on philanthropic aid, either from Government, corporate authorities, or private individuals. 4. The most efficient aid that the Government can give is to grant loans at a low rate of interest,—say 2½ per cent.,—to companies who erect dwellings at a low rent for the *bonâ-fide poor*, the repayment of such loans to extend over a longer period than is now the custom (thirty years). 5. That it shall be incumbent on corporate authorities, as the appointed guardians of the public health, where the want of proper dwellings for the poor is shown to exist, to provide sites for the erection of such dwellings; and, in order to encourage such erection, to grant a reduction of rates, or afford such other aid as may enable the promoters to secure a satisfactory return. 6. That the sanitary officers should take more vigorous action under the powers already conferred upon them to improve the condition of existing dwellings and the removal of nuisances, whether caused by bad tenants, or the neglect of unscrupulous landlords, care being taken to reach the real offenders.—*Sanitary Record.*

Railway Progress in Australia.—From the *Melbourne Argus* we learn particulars of the scheme of railways proposed in the Bill before the Legislature, for providing the colony with about 900 miles of new lines. When the Bill for raising a loan for the purpose was introduced in 1882 a sum of 2,700,000*l.* was set apart as sufficient to meet their cost. It appears, however, that that sum has disappeared without one inch of the lines in question having been constructed. But now it is said that a sum of no less than 7,700,000*l.* will have been expended before the lines proposed in 1882 are constructed. Such varying estimates, it is added, amount to trifling with the public, and their inevitable tendency is to discredit the railway cause. "Worthless political estimates" are considered to be the secret of the evil. Surely there must exist some remedy against such an evil if those in authority would only seek for it.

Messrs. Jones & Willis, the well-known art metal workers and church furnishers, have recently had erected for them new business premises in Edmund-street, Birmingham, from the designs of Mr. Phipson, architect, of Birmingham. The elevation is of a Gothic character, and is chiefly remarkable for having above the shop story an oriel window of two splays only, meeting in a central angle. The effect is, for a central window, somewhat thin and weak. The land on which their old premises stands in Temple-row has been taken by the managers of the Conservative Club on which to erect a new clubhouse. Some eight architects were invited to send in designs in competition, to which six responded, and those of one gentleman were selected. On these being exhibited to the members so much dissatisfaction was expressed, that a general meeting of members was called, when both plans and site were condemned, and the building committee are reported to have resigned in a body.

Wandle Valley Main Drainage.—We may mention that these works, to which we referred in a recent "Note," were carried out under Mr. Baldwin Latham, C.E., for the Croydon Rural Sanitary Authority. Nearly ninety miles of pipes, &c., have been used, supplied by Messrs. Doulton & Co., and about two miles of concrete tubes, supplied by Messrs. Sharp, Jones, & Co. Bricks by the Aylesford Pottery Co. The whole of the manhole-tops, valves, sluices, &c., have been supplied by Messrs. Stone & Co. The works were constructed by Messrs. B. Cooke & Co., of Battersea, whose contract amounted to about 110,000*l.*, this sum including the whole of the house connexions, which were constructed under the local surveyor, Mr. R. M. Chart. The resident engineer was Mr. Wm. Santo Crimp, C.E., F.G.S., Surveyor of Wimbledon; and the clerks of works, Messrs. Snook, Wren, & Brown; the contractor's representative being Mr. T. Wilkinson.

New Workhouse Buildings at Shoreditch.—Extensive additions have just been made to the workhouse at Shoreditch, and the new buildings are intended to be opened for the reception of inmates in the course of next month. They are situated in Reeve-place, contiguous to the present workhouse buildings, and occupy a ground area of nearly 9,000 superficial feet. They consist of three separate blocks, one block being for able-bodied inmates, male and female; another block is for children; and the third block for casuals. The several blocks are all in picked stock brick, with red Fareham bricks for dressings. The principal block is that for able-bodied paupers. It covers an area of 3,120 ft., and is 70 ft. in length, the front elevation being surmounted by a central pediment, rising to a height of about 80 ft. It contains four floors, in addition to a basement devoted to work-rooms. The ground-floor contains day-rooms. All the upper floors are arranged as dormitories. This block has accommodation for 150 inmates, seventy-five males and seventy-five females. The children's block occupies an area of about 1,200 ft., in addition to which there is a recreation space of 800 ft. The casual ward block covers an area of 3,000 ft. The casual wards are built on the cellular principle. Messrs. Lee & Smith, of Queen Victoria-street, are the architects, and Mr. T. Boyce, of the Eagle Works, Hackney, is the contractor. Mr. Birtchnell is clerk of the works. The cost of the buildings is 20,000*l.*

Sanitary Assurance Association.—The first of a series of lectures on sanitary subjects was given on Wednesday evening last, at the Parkes Museum, Margaret-street, W., when Mr. Henry Rutherfurd, barrister-at-law, lectured on "Sanitary Assurance, from a Householder's Point of View." Dr. R. Farquharson, M.P., presided. Mr. Rutherfurd began his lecture with an allusion to the apathetic attitude of a large portion of the public in regard to sanitation. He spoke of the absence of efficient sanitary arrangements in large houses as well as in smaller dwellings, and referred to his own experience as a householder who had sought the advice of the Sanitary Assurance Association, which led to his ascertaining the fact that instead of the drain from his house going into the main sewer as he had imagined, it ran in an opposite direction and discharged itself into his neighbour's garden; and further, that the drain was not in any way disconnected from the house. In speaking of the Association, he said that sanitation had become a science in itself, only to be mastered by special study and actual experience. He did not recommend the compulsory inspection of dwellings; the intrusion into our houses of officials who merely came to see if any evils existed, was a form of paternal government which we were not as yet disposed to encourage. At the same time, he suggested that every house ought to possess a sanitary certificate, obtained from a properly-qualified person.

An Improvement in Stoves.—According to a correspondent, a Birmingham engineer has recently patented an arrangement by which a greatly-increased result may be obtained in our parlour stoves. In the case of one with a semicircular arched front, and a fire-brick back, but no register, he makes a narrow cast-iron frame to fit over the fire around the back and across the front, and tilted to an angle, say of 30 deg., with the horizontal, the front part of the frame being at the springing of the arched opening or thereabouts. To this front bar is hinged a valve which can either be fixed upright against the back of the arched opening, when it acts upon the fire as a blower, or it may be shut down upon the frame, so as to stop the direct draught with the chimney; the smoke and flame striking the under-side of the valve, and is deflected forward with its attendant heat, the smoke is met at the front edge of the frame by the draught and carried over up the chimney. The valve can be worked with a hooked poker, or more elaborately by a screw arrangement. The heat radiated into the room is about doubled by the use of this valve. Mr. John Inshaw, who has made this invention, is now over seventy-seven years of age, and is the same gentleman who got the prize for the first passenger steamer on the Thames,—a vessel which he made in Birmingham and steamed to London through the canals.

Erratum.—On page 689, *ante*, first line of first column, for King Henry "III." read "VIII."

Manchester Architectural Association. The second ordinary meeting of the above Association was held at the Old Town-hall on Tuesday last, Mr. Colley in the chair. Mr. J. S. Hodgson read a paper on "Sewage Farms," in which he said:—Sewage farms at one time were looked upon more as the invention of speculators for the utilisation of the manure than for the speedy removal of the filth from the neighbourhoods of habitations, but are now admitted to be the only true means of disposing of liquid sewage from inland towns. These farms are often spoken of in no very flattering terms, but, properly constructed and managed, are very satisfactory. There is great prejudice against them, from the notion that they are injurious to health, which is contradicted by the report of the Rivers Pollution Commission, Dr. Littlejohn, Medical Officer of Health to the City of Edinburgh; Professor Christison, of the Royal Society of Edinburgh; Dr. A. Carpenter; and many others. A discussion followed, in which Messrs. Colley, Oldham, Brooke, Chadwick, Talbot, Worthington, and Preston took part.

Porthleven (Cornwall).—The picturesque village of Porthleven, Helston, Cornwall, has received an addition, both useful and ornamental, by the erection in the tower of the Institute of a new clock, manufactured by Mr. J. W. Benson, of Ludgate-hill, London. The clock has four dials of upwards of 4 ft. diameter, one of which on the land side is illuminated. The hours are struck upon a bell of 4 cwt. of a full rich tone. The clock and tower have been erected at the sole cost of Mr. W. Bickford Smith, of Helston.

Market Weighton.—A company is being formed for supplying Market Weighton with water. Mr. J. F. Fairbank, M. Inst. C.E., and engineer for the Beverley and Driffield Water Companies, is the engineer.

COMPETITIONS, CONTRACTS, & PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

COMPETITIONS.

Nature of Work.	By whom required.	Premium.	Designs to be delivered.	Page.
Plans for Erection of a Hospital	Newbury District Hospital Trustees...	.....	Not stated ...	i.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Compressed Asphalte Pavement	Liverpool Corporation	City Engineer	Dec. 1st	ii.
Erection of a Stand for Animals on Peckham Rye Common	Met. Board of Works	*Official*	Dec. 3rd	ii.
Stores	Great Northern Ry. Co.	.....	Dec. 6th	ii.
Stoneware or Fireclay Pipes, Land Drainage Tiles and Carriers, &c.	Normanton Local Brd.	Thos. Reid.....	Dec. 8th	xviii.
Paving Works.....	Vestry of St. Giles, Camberwell.....	*Official*	do.	ii.
Sewerage Works.....	Greenwich Bd. of Wks.	do.	Dec. 10th	ii.
Well-Sinking and Pumping	Croydon Town Council	Borough Engineer	Dec. 11th	ii.
Additions, &c., to School.....	Chigwell School Board	E. Egan	do.	xviii.
Broken Granite	Bishop Stortford L. B.	.....	do.	ii.
Construction of Concrete Pier at Newlyn	Newlyn Pier & Harbour Commissioners	J. C. Inglis	Dec. 13th	xviii.
Works and Materials for one year	St. George, Hanover-sq.	G. Livingstone	do.	ii.
Erection of Inland Revenue Office, Portsm'th	Commissnrs. of Works	*Official*	do.	ii.
Works, &c., and Supply of Building Materials	War Department.....	do.	Dec. 15th	i.
Baths and Washouses	City of Newcstle-on-Tyne	Gibson & Allan.....	do.	ii.
Sewerage Works	Darlaston U. S. A.	E. Pritchard	Dec. 18th	ii.
Alterations to Assize Courts, Hertford	County of Hertford Magistrates.....	Urban A. Smith	Dec. 19th	xviii.
Completion of Cottages, Epping	.....	J. K. Green & Son	Not stated ...	i.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Architectural Draughtsman	Civil Service Com.	Not stated	Dec. 24th	xvi.

TENDERS.

For the erection of villa residences at Norbiton Park. Mr. Frank Fowler, architect. Quantities supplied:—

	One House.	Two Houses.	Eight Houses.
Thornsett	£780	£1,440	£6,128
Hooper	757	1,497	5,783
Worman	745	1,541	6,040
Holliday & Greenwood	737	1,449	5,723
Fisher	697	1,350	5,233
F. Higgs	690	1,360	5,200
Pile	630	1,230	4,790
Sillick	620	1,200	4,700
Pack Bros.	597	1,166	4,640

For small hall and offices, for the Local Board of Health, Carshalton, Surrey, for the Carshalton Public Hall Company, Limited. Mr. J. D. Hayton, architect. Quantities prepared by Mr. C. R. Griffiths, Bank-chambers, Tooley-street, London Bridge:—

Brazier & Son, Blackfriars-road	£770 0 0
F. Dawes, Peckham	680 0 0
S. Sabey & Son, Islington	634 0 0
T. J. Messom, Twickenham	629 0 0
Thos. Taylor, Kingsland	623 0 0
Maides & Harper, Croydon	594 0 0
Lilley & Anderson, Wallington	577 17 9
W. & F. Croaker, Southwark	568 0 0
C. Dearing & Son, Islington	566 5 8
J. Smith & Son, South Norwood	547 0 0
B. Cook, Stonecutter-street	536 0 0
W. Hazell, Mitcham	530 0 0
A. M. Deacon & Co., Lower Norwood	498 0 0
Martin Taylor, Croydon	490 0 0
W. Pearson, Croydon	485 0 0
C. Coles, Croydon	477 0 0
J. B. Potter, Sutton	477 0 0
H. Clark, Wallington	472 0 0
Howe & White, Wallington	470 0 0
W. H. Richardson, Carshalton	451 0 0
R. J. Humphris, Sutton	450 0 0
Duncan Stewart, Wallington	448 0 0
E. J. Burnand, Wallington	445 0 0
J. Sedgwick, Croydon	436 0 0
S. J. Evans,* Carshalton	397 0 0

* Accepted, subject to modifications.

For the erection of a school for 870 children, in Eglinton-road, Greenwich, for the School Board for London. Mr. E. R. Robson, architect:—

Grover	£12,600 0 0
Lonergan Bros.	12,596 0 0
W. Scrivener & Co.	12,572 0 0
E. C. Howell & Son	12,553 0 0
Patman & Fotheringham	22,419 0 0
Wall Bros.	12,249 0 0
C. Wall	12,184 0 0
S. J. Jerrard	11,983 0 0
Stimpson & Co.	11,970 0 0
Kirk & Randall	11,883 0 0
W. Johnson,* Wandsworth-common	11,600 0 0

* Accepted.

For carrying out various structural improvements to Mantua-street school, and providing class-room accommodation for forty-seven additional children, for the School Board for London. Mr. E. R. Robson, architect:—

J. Oliver	£5,064 0 0
W. Goodman	4,747 0 0
E. C. Howell & Son	4,565 0 0
Steel Bros.	4,549 0 0
Turtle & Appleton	4,542 0 0
J. Smith & Sons	4,530 0 0
W. & F. Croaker	4,529 0 0
W. Bangs & Co.	4,451 0 0
W. Oldrey	4,449 0 0
Kirk & Randall	4,437 0 0
S. J. Jerrard	4,379 0 0
C. Wall	4,306 0 0
Holloway Bros.	4,298 0 0
F. & F. J. Wood	4,292 0 0
H. L. Holloway	4,277 0 0
Lathey Bros.	4,270 0 0
Stimpson & Co.	4,263 0 0
W. Johnson,* Wandsworth-common	4,238 0 0

* Accepted.

For the construction of a reservoir at Crosby Meadows, Dartmouth, and for providing and laying iron water-mains, for the Town Council. Mr. E. H. Back, C.E., Borough Surveyor:—

Hawking & Best, Teignmouth	£862 12 6
Shaddock Bros., Mutley, Plymouth	844 0 0
Hawkins, Dawlish (accepted)	647 0 0

For alterations to the Victoria Tavern, Grove-road, Mile-end. Messrs. Hammack & Lambert, architects:—

Hearle & Son	£1,083	0	0
Cocks & Co.	933	0	0
Lascelles & Co.	890	0	0

For seven cottages on the Artillery Field Estate, Guildford, for Mr. G. W. Cole. Messrs. Peak, Lunn, & Peak, architects, Guildford. Quantities supplied:—

Pink, Milford	£2,779	0	0
Nye, Guildford	2,459	0	0
Garnett, Guildford	2,449	10	0
Mitchell, Shalford	2,413	2	7
Martin Wells & Co., Aldershot	2,400	0	0
Kingerlee, Oxford	2,390	0	0
Peters, Horsham	2,235	0	0
Strudwick, Guildford	2,195	0	0
Bottrill, Reading (accepted)	1,973	0	0

For shops and offices, Broad-street, London, for Mr. Edward Lukyn. Mr. Edwin T. Hall, architect, Moorgate-street. Quantities by Mr. G. A. Pryce-Cuxson, Westminster-chambers, and Mr. E. Overall, Henrietta-street, Covent-garden:—

W. Brass	£6,371	0	0
Clarke & Bracey	9,280	0	0
J. & J. Greenwood	6,197	0	0
Colls & Son	6,176	0	0
Holland & Hannen	6,075	0	0
Foster & Dicksee	5,950	0	0
J. Woodward	5,926	0	0
Bangs & Co. (accepted)	5,690	0	0

For repairs, &c., 15, Green-street, Grosvenor-square. Mr. Edwin T. Hall, architect:—

Lynde	£189	0	0
Tavener & Sons (accepted)	182	0	0

Accepted for alterations, and building new wing, to Allerton Hall, near Leeds, the residence of Mr. W. L. Jackson, M.P. Mr. Thomas Winn, architect, 18, Park-lane, Leeds. Quantities by the architect:—

Bricklayer, Mason, and Joiner, Nicholson & Son, Leeds; *Plasterers*, Franks & Evans, Leeds; *Plumber*, Joseph Lindley, Leeds; *Slater*, James Seasons, Leeds; *Bellhanger*, James Simpson, Leeds; *Ironfounder*, Dawson & Kinneley, Leeds	£1,732	18	6

Accepted for building new offices, model-making and stoveing shops, new foundry, and drawing offices, at the Old Foundry Steam Crane Works, Rodley, near Leeds, for Mr. Thomas Smith, Mr. Thomas Winn, architect. Quantities by the architect:—

Wm. Nicholson & Son, Leeds	£2,315	0	0

For alteration of premises in Albion-street, Leeds, for Mr. Samuel James Brown. Mr. Thomas Winn, architect. Quantities by the architect:—

Irwin & Co., Leeds	£640	0	0
Longley Bros., Leeds	602	0	0
Tomlinson & Son, Leeds	600	0	0
J. A. Thorp, Leeds	599	0	0
Franks & Evans (accepted)	554	0	0

For the continuation and completion of the Wightman-road sewers, surface-water drains, &c., on the Harringay Park Estate, Hornsey, for the British Land Company, Limited. Mr. Henry B. Mitchell, surveyor:—

Nowell & Robson, Kensington	£2,857	0	0
Harris, Camberwell	2,700	0	0
Keeble, Regent's Park	2,627	0	0
Killingback, Camden-town	2,397	0	0
Pizzey, Hornsey	2,377	0	0
Bloomfield, Tottenham	2,280	0	0
Wilson, Walthamstow	2,150	0	0
Jackson, Leyton	2,084	0	0
Peill, Bromley, Kent (accepted)	1,920	0	0

For alterations to the Craven Hotel, Lavender-hill, Wandsworth, for Mr. Edward McKinnell. Mr. Henry S. Tyack, architect, 5, Bloomsbury-square:—

J. Dodson	£492	0	0
S. Hayworth	484	0	0
Burch & Co.	417	0	0
J. Watkins	409	0	0
Wm. Ellis	399	0	0
J. W. Taylor (accepted)	311	10	0
W. H. Thorn	297	10	0

For rebuilding at 8, Blackfriars-road. Mr. Richard Groom, architect, Bridge-chambers, 172, Queen Victoria-street:—

Stains & Son	£516	0	0
Marsland	505	0	0
Oldis Bros., Wilson-street	452	0	0

For the construction of about 4,903 lineal yards of brick, stoneware, and cast-iron sewers, with all necessary junctions, manholes, lamp-holes, and the outfall and intercepting tanks, for the Stroud Rural Sanitary Authority. Mr. J. P. Lofthouse, C.E., engineer. Quantities by the engineer:—

Contract No. 1.

T. Smal. & Sons, West Bromwich	£2,727	0	0
Bottoms Bros., Battersea	2,713	0	0
J. Greenslade, Stroud	2,565	0	0
J. T. Whettam, Weymouth	2,495	0	0
B. Cooke & Co., Battersea	2,364	0	0
H. Welsh, Hereford	2,358	0	0
J. Young & Co., Hertford	2,288	0	0
Thos. Williams, Swansea	2,285	0	0
G. Cowdery & Sons, Newent, Glos.	2,274	0	0
J. Dickson, St. Alban's	2,156	0	0
J. Hawkins, Dawlish	2,097	0	0
Ambrose & Son, Bath (accepted)	1,948	0	9
Engineer's estimate	2,465	0	0

For the erection of a shoe factory at Starch-green, W., for Messrs. Peal & Co. Mr. T. Chatfeild Clarke, architect. Quantities by Mr. H. H. Leonard:—

		Wrought Timbers.	Total.
Colls & Sons	£2,985	£117	£3,102
J. Grover	2,934	150	3,084
J. Woodward	2,865	115	2,980
J. T. Chappell	2,815	85	2,900
Brown, Son, & Blomfield	2,775	110	2,885
J. & J. Greenwood	2,750	110	2,860
Ashby Bros.	2,699	134	2,833
P. Lawrance & Sons	2,695	78	2,773
Hall, Beddall, & Co.	2,620	98	2,718
B. Nightingale	2,620	70	2,690

For alterations and shop fronts, &c., at Nos. 30 and 31, Peter-street, Soho, for Mr. E. Saville. Mr. Frederick H. Culverhouse, surveyor:—

Gould & Brand (accepted)	£298	0	0

Accepted for sundry works, decorations, &c., at the Walford Arms, Stoke Newington-road, for Mr. G. C. Busley:—

Oldis Bros., Wilson-street	£173	0	0

Stables, Seamore-place.—The architect of this work is Mr. E. Crosse, not *C.* Crosse. The list as inserted last week was (we suppose inadvertently) sent to us by one of the builders a second time, it having already appeared some weeks ago.

Special Notice.—Lists of tenders frequently reach us too late for insertion. They should be delivered at our office, 46, Catherine-street, W.C., not later than four p.m. on Thursdays.

PUBLISHER'S NOTICES.

CHARGES FOR ADVERTISEMENTS.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE, AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for Series of Trade Advertisements, also for Special Advertisements on front page, Competitions, Contracts, Sales by Auction, &c. may be obtained on application to the Publisher.

SITUATIONS WANTED.

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PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps *must not* be sent, but all small sums should be remitted by Cash in Registered Letter or by Money Order, payable at the Post-office, Covent-garden, W.C. to

DOUGLAS FOURDRINIER, Publisher,
Addressed to No. 46, Catherine-street, W.C.

Advertisements for the current week's issue must reach the Office before THREE o'clock p.m. on THURSDAY.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c. left at the Office in reply to Advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

SPECIAL.—ALTERATIONS in STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same, must reach the Office before TEN o'clock on WEDNESDAY mornings.

PERSONS Advertising in "The Builder," may have *Replies addressed to the Office*, 46, Catherine-street, Covent-garden, W.C. *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage.

TERMS OF SUBSCRIPTION.

"THE BUILDER" is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum, PREPAID. To countries within the Postal Union, 26s. per annum. Remittances payable to DOUGLAS FOURDRINIER, Publisher No. 46, Catherine-street, W.C

TO CORRESPONDENTS.

F. C.—A. B. M.—D. J. M.—C. L. (copy forwarded).—"Improvement" (had better improve his own spelling before he next writes).—"Highlander" (can be obtained from Messrs. Doulton's, Lambeth Potteries. Signature to accompanying letter not legible).—Mr. H. and G. P. (cannot advise).—H. T.—W. G. K.—G. C. (will write).—A. E. (shall be happy to give it consideration).—C. E. C.—W. F. L.—C. J.—O. Bros. (we see no reason for departing from our rule).—E. C. (below our mark).

All statements of facts lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read a public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news-items) which have been duplicated for other journals, are NOT DESIRED.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; all communications relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

Best Bath Stone.
WESTWOOD GROUND,
Box Ground, Combe Down,
Corsham Down,
And Farleigh Down.
RANDELL, SAUNDERS, & CO., Limited,
Corsham, Wilts. [ADVT.

Dry Corsham Stone.
150,000 FEET CUBE.
PICTOR & SONS,
BOX, WILTS.
[ADVT.

Doulting Freestone and Ham Hill Stone of best quality, in blocks, or prepared ready for fixing. An inspection of the Doulting Quarries is respectfully solicited; and Architects and others are CAUTIONED against inferior stone. Prices, delivered to any part of the United Kingdom, given on application to CHARLES TRASK, Norton-sub-Hamdon, Ilminster, Somerset.—Agent, Mr. E. WILLIAMS, 16, Craven-street, Strand, W.C. [ADVT.

Doulting Free Stone
HAM HILL STONE,
BLUE LIAS LIME
(Ground or Lump),
For prices, &c., address S. & J. STAPLE, Quarry Owners, Stone and Lime Merchants, Stoke-under-Ham, Ilminster. [ADVT.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. [ADVT.

Asphalte.
Seyssel, Patent Metallic Lava, and White Asphaltes.
M. STODART & CO.
Office:
No. 90 Cannon-street, E.C. [ADVT.

MICHELMORE & REAP,
Manufacturers of
CHARLES COLLINGE'S PATENT.
COLLINGE'S PATENT HINGES,
LEVER, SCREW, & BARREL BOLTS,
Self-Acting "FALL DOWN" GATE STOPS,
and IMPROVED GATE FITTINGS of every Description.
36A, BOROUGH ROAD,
LONDON, S.E.
DISCOUNT TO BUILDERS.

GOLD AND SILVER MEDALS AT AMSTERDAM EXHIBITION.
IRON CISTERNS.
F. BRABY & CO.
LONDON, LIVERPOOL, GLASGOW.
VERY PROMPT SUPPLY.
LARGE STOCK READY.
CYLINDERS FOR HOT-WATER CIRCULATION.
Particulars on application. *Chief Office: 360, EUSTON ROAD, LONDON.*